WATERLOO METRO QUARTER OVER STATION DEVELOPMENT

Environmental Impact Statement
Appendix OO – Contaminated Sites Strategy
Report Volume 3

SSD-10437 Southern Precinct

Alternative Reference
Appendix GG
SSD-10438 Basement Car Park

Detailed State Significant Development
Development Application

Prepared for **Waterloo Developer Pty Ltd**

30 September 2020

Volume 3

Appendix C

Previous Report: GDP (2019)

Appendix C

Previous Report: GDP (2019)

GOLDER Douglas Partners
Geotechnics / Environment / Groundwater

ENVIRONMENTAL SITE ASSESSMENT

SYDNEY METRO CITY SOUTH-WEST

Environmental Site Assessment - Waterloo Integrated Station Development, Botany Road, Waterloo NSW

1791865-008-R-Rev1

13 March 2019

Submitted to:
Transport for NSW

sydney METRO

Distribution List

Sydney Metro Authority

Golder-Douglas Project Library

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1.0 INTRODUCTION

1.1 Project Context

Sydney Metro is a modern high capacity rail network which will respond to Sydney's forecast population and economic growth. Working collaboratively with Sydney Metro and their partners, Golder-Douglas delivered a geotechnical investigation for Stage 1 Sydney Metro Northwest. In addition to geotechnical investigations, the work included investigation of groundwater conditions and assessment of soil contamination.

Sydney Metro subsequently requested Golder-Douglas to conduct an Environmental Site Assessment (ESA) for land at Botany Road, Waterloo, New South Wales (hereinafter referred to as the 'site', see **Figure 1**) which forms part of the Stage 2 Sydney Metro City and Southwest project.

1.2 Terms of Reference

Golder Associates Pty Ltd was the contracting organisation with Sydney Metro and Douglas Partners was a subcontractor to Golder. WSP and AECOM are the Geotechnical Technical Advisor and Nation Partners are the Environmental Technical Advisor to TfNSW.

The investigations were carried out under TfNSW Professional Services Contract (Construction Industry) No. 00013/11180 executed on 19 February 2018. The work was carried out in general accordance with the requirements of the Services Brief (*Waterloo – Geotechnical Investigation and Environmental Site Investigation, 10 August 2018 – Rev 2*) ("The Brief").

Sydney Metro have requested that this contamination investigation be undertaken as a variation to the existing PSC (00013/11180) contract.

1.3 Site Background

Sydney Metro has acquired an area of land at Waterloo, NSW. The land is proposed to be redeveloped as part of the Sydney Metro City and Southwest project Integrated Station Development (ISD) project. The site is adjacent to, but does not include, the new Waterloo station shaft which is currently being excavated by the Sydney Metro delivery Contractor (John Holland, CPB & Ghella Joint Venture – JHCPB&G). The site is under the control of JHCPB&G (the Principal Contractor for the current project stage of the station development).

The site was formerly used for a variety of commercial and light industrial purposes. The majority of structures on the site were demolished between August 2017 and March 2018 to facilitate the construction of the adjacent Metro Station. A heritage listed church is located between the northern and southern portions of the site which is to be preserved. The church separates the site into two blocks, the Northern Block and the Southern Block.

The Waterloo station shaft, currently under construction, is to be substantially constructed below the ground surface level, with excavation and construction extending upwards of 30 m below the ground surface.

Sydney Metro's partners, Urban Growth NSW, propose to develop the air space above the new Waterloo Station and the site as a commercial, retail and high-density residential precinct, which will include some publicly accessible open spaces. The development is referred to as an MQD.

JHCPB&G are delivering the station excavation on behalf of Sydney Metro and future development of the station structure will be delivered by a follow-on contractor. As part of the Metro Station development JHCPB&G will excavate and dispose of soils from the adjacent station box, however they are not obliged to undertake any remediation outside the station box excavation i.e. the station box will be remediated however they will not investigate nor remediate the site. JHCPB&G will not be installing significant infrastructure on the site and there will be no subsurface connection between the Metro Station and the proposed development on the site during the TSE works.

Site development plans provided (including both above the station and on the site) are at concept stage only and are likely subject to significant change based on planning approvals. For the purposes of the project, the following land uses were identified by Sydney Metro as being potentially relevant to all portions of the site:

- Ground level commercial, retail and community buildings will be present;
- High density multi-storey residential premises will exist with ground level entry/exit points;
- Subsurface spaces will include:
  - A minimum of 1 level of underground parking. Additional levels of subsurface parking may be added during the design stage;
  - Retail spaces (e.g. subsurface level of a supermarket);
  - Service rooms, maintenance rooms and end of trip facilities (e.g. shower rooms); and
- Publicly accessible open space. Open space may be hardstand or landscaped.

1.4 Objectives

The overall objective of the ESA is to gain sufficient information on the nature and extent of soil and groundwater contamination to assess the suitability of the site and to also inform the potential need for remediation and/or management of contamination.

The following objectives for the works are based on those described in the variation request (Sydney Metro, 10 August 2018):

- Assess the presence, nature and potential extent of the detected contamination (including potential acid sulfate soil (PASS) and actual acid sulfate soils (AASS)) at the site;
- Assess the potential impacts of contamination on the proposed redevelopment, considering soil, groundwater and vapour/odour intrusion risks;
- Obtain preliminary in-situ waste classification data (soil and fill) for off-site waste disposal purposes;
- Formulate recommendations for the management and remediation of any identified contamination or PASS/AASS during the proposed redevelopment works; and
- Provide an indication of the contamination risk to assist the assessment of the associated impact on cost, constructability, design and eventual operation/occupancy (by others).

1.5 Assessment Methodology

1.5.1 Approach Under Regulatory Framework

The *Contaminated Land Management Act 1997* (the *CLM Act*) is the primary regulatory instrument governing the management of contaminated sites in NSW. Section 105 of the *CLM Act* allows the NSW EPA to make or approve guidelines for the investigation, remediation and management of contaminated lands.

The ESA has been completed with reference to relevant State and National guidance documents, endorsed under the *CLM Act*, including, but not limited to:

- *Guidelines for the NSW Auditor Scheme (3rd edition)*, NSW Environment Protection Authority (EPA 2017);
- *Guidelines for Consultants Reporting on Contaminated Sites*, Office of Environment and Heritage (OEH 2011);

- *National Environment Protection (Assessment of Site Contamination) Measure 1999*, National Environment Protection Council (NEPC 2013);
- *Sampling Design Guidelines,* NSW Environment Protection Authority (EPA 1995);
- *Guidelines for the Assessment and Management of Groundwater Contamination*, Department of Environment and Conservation (DEC 2007);
- *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZG 2018);
- *Australian Drinking Water Guidelines 6 2011* (NHMRC 2011)[2]; and
- *Designing Sampling Programs for Sites Potentially Contaminated by PFAS,* NSW Environment Protection Authority (EPA 2016b).

1.5.2 Scope of Works Completed

The ESA scope of works included the following:

- Completion of desk-top review including:
  - Review of land use zoning for the site, sourced from the Council of the City of Sydney (CoS) Sydney Local Environmental Plan 2012 (CCS 2012);
  - Identification of contaminated sites listed on the NSW Environment Protection Authority's (EPA) website under either Section 58 or 60 of the *CLM Act;*
  - Review of the public register maintained under Section 308 of the *Protection of the Environment Operations Act 1997* (the *POEO Act*);
  - Review of historical land title information related to the site;
  - Review of historical aerial photographs for the site;
  - A search of the SafeWork, NSW files for records relating to historical storage of hazardous chemicals at the site[3];
  - Review of published maps and databases with site coverage to establish likely surface and subsurface conditions (including geology, hydrogeology, soil landscape, topography and likelihood of acid sulfate soils);
  - Search and review of information readily available through the internet (e.g. Department of Primary Industries (Water) (DPI (Water)) registered groundwater bore database within the vicinity (500 m) of the site); and
  - A review of available existing environmental assessment reports relevant to the site;
- Conducting an initial site walkover inspection of the site to view the current site activities;
- Development of a preliminary Conceptual Site (contamination) Model (CSM) identifying the potential sources, pathways and receptors of potential site contamination;
- Based on the preliminary CSM, preparation of a Sampling Analysis and Quality Plan for implementation as part of the intrusive works;

[2] The Version 3.4 update of NHMRC 2011 was released in October 2017.

[3] Formerly referred to as a 'dangerous goods' search

- Implementation of the SAQP including:
  - Collection of soil samples from nineteen borehole locations with hand auger and drill rig;
  - Installation, development and sampling of four new groundwater monitoring wells;
  - Development and sampling of two existing groundwater monitoring wells;
  - Installation and sampling of six soil vapour monitoring wells; and
  - Analysis of soil, groundwater and soil vapour samples for site identified Potential Contaminants of Concern (PCoC).
- Interpretation of soil, groundwater and soil vapour analytical results, including review of the results against NSW EPA endorsed criteria;
- Refinement of a Conceptual Site (contamination) Model (CSM) identifying the potential sources, pathways and receptors of potential site contamination; and
- Provision of recommendations for areas of the site where contaminant management or remediation works are required.

2.0 SITE IDENTIFICATION

2.1 Site Identification

The site is located along Botany Road, Waterloo, New South Wales and relevant property information is summarised in **Table 1**. A site plan showing the location is attached as **Figure 1**.

Table 1: Site Identification

Item	Details
Street Address	49-67 Botany Road, Waterloo & 69-83 Botany Road Waterloo, New South Wales 2017
Approximate Site Area	**Northern Block:** 5,850 m^2 **Southern Block:** 1,900 m^2
Current Land Use	Construction compound to facilitate the redevelopment of the adjacent land as a new Sydney Metro Station
Legal Property Description (Lot and Deposited Plan ((DP))	**Northern Block:** Portion of Lot 4 & 5, DP 215751 Portion of Lot 1, DP 814205 Portion of Lot 1 & 2, DP 228641 Portion of Lot 12, DP 399757 Portion of Lot A, B, C, D & E, DP108312 SP75492 Lot 1 & 2, DP 27454 Lot 1, DP 996765 Lot 1, DP 433969 Portion of Lot 1, DP 738891 **Southern Block:** Portion of Lot 31 & 32, DP 805384 Portion of Lot A, DP 408116 Portion of Lot 1 & 2, DP 205942 Lot 1, DP 436831
Approximate Geographic Co-ordinates (centre point of the site) GDA 1994, MGA Zone 56	333570 m E 6247708 m S
Local Government Area (LGA)and Land Use Zoning	City of Sydney LGA B4 Mixed Use

2.2 Site Description

The site (Northern and Southern Block) occupies an area of approximately 7,750 m^2. At the time of the intrusive works of the ESA (October 2018) the site was covered by concrete hardstand and was being used as a construction compound to facilitate redevelopment of the adjacent land as the new Sydney Metro Waterloo Station. At the time of the investigation, the southern block was being used mainly as light vehicle parking and site offices. The Northern Block was being used for the following:

- Equipment storage, predominately in the northern section;
- A water treatment plant and water retention basin are located along the central western boundary of the site; and
- A spoil storage area / load out area is located in the southern section.

A site plan is attached as **Figure 1**.

2.3 Surrounding Land Use

The site is located in an area of predominantly commercial/industrial properties with medium to high density residential properties located to the east. The surrounding land uses are identified in **Table 2**.

Table 2: Surrounding Land Use

Direction	Details
North	Commercial/industrial land use, recreational land
West	Commercial/industrial land use
South	Commercial/industrial land use, residential housing with open space located to the south west beyond this
East	The construction site for the new Sydney Metro Waterloo Station, followed by high density residential housing with open space

3.0 ENVIRONMENTAL SETTING

3.1 Topography and Drainage

The site is located in a generally level area with an elevation of approximately 17 to 19 metres Australian Height Datum (m AHD) (Google Earth, 2018). The field survey data collected during the ESA indicates that the site is generally flat with elevations ranging between 15.1 m AHD and 16.7 m AHD. The site appeared to have marginally higher elevations towards the north of the site.

The site stormwater drainage is expected to be connected to the municipal stormwater system and would be expected to drain to the Alexandra Canal, located to the south west. The Alexandra Canal eventually discharges into Botany Bay via the Cooks River, located approximately 6 kilometres (km) south west of the site.

3.2 Geology

3.2.1 Soils and Landscapes

Based on review of on-line mapping service, eSPADE[4], residual soil at the site (if present) would be part of the Tuggerah soil landscape group, consisting of coastal dune fields, widely cleared open-forest/ eucalypt woodland and urban residential land. Soils in these locations are described as typically deep (greater than 200 cm), loamy, mottled, bleached, organic stained, iron stained or clayey sand. Soils on site are expected to be non-cohesive, highly permeable, with very low soil fertility, subject to localised flooding and permanently high-water tables (Chapman et al 1989).

3.2.2 Geology

A review of the *1:100,000 scale Sydney Geological Series Sheet 9130* (DMR 1983) indicates that the site is located in an area mapped with Quaternary sediments as the underlying formation. These sediments are indicated to comprise of medium to fine grained “marine” sand with podosols.

3.2.3 Acid Sulfate Soils

Acid sulfate soils (ASS) planning sheets associated with *Sydney Local Environment Plan 2012* (the SLEP) (CCS 2012) identified the site as being located in an area of ‘Class 5 ASS’.

ASS planning maps were originally prepared by the NSW Department of Land and Water Conservation to indicate the potential presence of ASS, rather than the severity of ASS at a particular location. The planning maps identify five classes of ASS (Class 1 to Class 5) and identify types of work likely to present an environmental risk for each class of land (ASSMAC 1998). If the types of work being undertaken are proposed in an area identified with potential ASS, further investigations are required to confirm the presence of ASS, and if present, the potential risk to the environment.

Further investigations and development consent may be required for works on Class 5 land which may lower the water table below 1 m AHD on adjacent Class 1 to 4 land which has an elevation of less than 5 m AHD within 500 m of the subject site.

On-line ASS mapping hosted by the *Australian Soil Resource Information System* (ASRIS) was reviewed through a Google Earth interface. The ASRIS mapping is based on existing data sets which have been converted to a national classification system (ASRIS 2011). ASRIS shows the site as being in an area of “*No Known Occurrence”* of ASS.

[4] The data accessible through eSPADE is mainly sourced from the NSW Soil and Land Information System, including soil landscape mapping data.

3.3 Hydrogeology

A search of on-line records held by the NSW Department of Primary Industry Office of Water (DPI) was performed on 22 November 2018. The search indicated there were eight licensed groundwater bores located within 500 m of the centre of the site. The results of the search are summarised in **Table 3** and presented in **Appendix A**.

Limited information was provided on the bore reports. Groundwater depths within 500 m of the site were reported at three locations ranging between 3.5 and 4.2 m bgl. The depth to groundwater reported during previous investigations at the site was approximately 3.0 m bgl.

During the site inspection a water treatment plant was observed in the central west section of the northern block. It was confirmed on site that it was being used to treat water from dewatering activities at the adjacent station box construction works. It is possible that the groundwater regime underlying the site has been temporarily altered due to this potential abstraction of water for treatment. In addition, groundwater hydraulic levels across the site may be artificially low due to the station box construction activities.

Table 3: Summary of Groundwater Bore Information

Bore ID	Purpose	Approximate distance and direction from site	Depth (m)	Standing water level (mbgl)	Comments
GW106192	Domestic	150 m west	6.0	4.0	WBZ 4.0 to 6.0, yield 0.5 L/s
GW114895	Monitoring Bore	125 m south	6.0	4.2	WBZ 4.2 to 6.0
GW111958	Monitoring Bore	290 m south-west	6.0	3.5	WBZ 3.5 to 4.5
GW113035	Monitoring Bore	420 m south-west	5.0	-	-
GW113036	Monitoring Bore	400 south-west	4.0	-	-
GW113037	Monitoring Bore	380 m south-west	5.0	-	-
GW113038	Monitoring Bore	385 m south-west	5.0	-	-
GW113039	Monitoring Bore	380 m south-west	5.0	-	-

Notes
-: no information provided
m: metres
mbgl: metres below ground level
WBZ: water bearing zone
L/s: litres per second

3.4 Climate

Meteorological conditions at the site have been inferred from long term records for the Sydney Airport AMO meteorological station, which is located approximately 6 km to the south west. The mean annual rainfall would be in the order of 1,080 mm, the wettest months being February to June and the driest month being

September. The mean number of days in a year with rain of 25 mm or higher would be in the order of 11 days. The mean maximum temperature would be in the order of 22.3 °C. The warmest month would be January, with the highest temperature recorded at Sydney Airport AMO of 46.4 °C recorded on 18 January 2013. The mean minimum temperature would be in the order of 13.5 °C. The coldest month would be July, with the lowest temperature recorded at Sydney Airport AMO of -0.1 °C recorded on 23 July 1943.

4.0 SITE HISTORY

4.1 Sources of Information

Golder undertook an historical review to provide information on previous land use and activities at the site and in the surrounding area, which may have contributed to potential site contamination. The following information sources were reviewed/consulted:

- Historical aerial photographs from the period 1930 to 2017; and
- Previous environmental reports.

The outcomes of the site historical review are provided in the following sections.

4.2 Historical Aerial Photographs

Historical aerial photographs from 1930, 1982, 1991 and 2002 were obtained from NSW Land and Property Information (LPI) for review. Historical aerial photographs 1955, 1961, 1965 and 1970 were obtained from Lotsearch Pty Ltd (2016). Historical aerial imagery from 1943 was observed via SixMaps, and imagery from 2017 was observed via Nearmap.

The aerial photograph review was conducted to ascertain a general history of the development of the site and surrounding area. This review is summarised in **Table 4**.

Table 4: Historical Aerial Photograph Review

Year	Description of Immediate Site	Description of Surrounding Area
1930	Whilst the aerial photograph is of poor quality and unclear, the site appears developed with a number of buildings generally covering the entire site. The church, which separates the northern and southern block, appears to be present, with a large building directly adjacent to the north and south. The remaining buildings appear to be much smaller in size.	The surrounding area appears to be largely developed with the road layout in the vicinity of the site consistent with the present layout (including Botany Road to the west). Alexandria Park is visible to the south-west of the site and there appears to be some construction to the south-east of the site.
1943	The site appears similar to that shown in the 1930 imagery, however, it appears that an 'L' shaped building has been constructed in the northern portion of the northern block.	The surrounding area appears similar to that shown in the 1930 imagery. Two new buildings (commercial / industrial in appearance) have been constructed to the south-east.
1955	The site appears similar to that shown in the 1943 imagery.	The surrounding area appears similar to that shown in the 1943 imagery with the exception of possible demolition works to the west of the site and some new high-density residential buildings some 120 m to the east.
1961	Considerable development has occurred at the site with a number of smaller buildings	The surrounding area appears similar to that shown in the 1955 imagery with the exception of

Year	Description of Immediate Site	Description of Surrounding Area
	demolished and replaced by larger buildings (commercial / industrial in appearance). The site appears to be entirely occupied by buildings with the exception of a small parcel of land along the western boundary of the site. There appears to be some construction activity in the northern most portion of the site. With the exception of the northern most portion of the site, the layout generally appears consistent with the layout pre-demolition for the Sydney Metro Waterloo Station works.	some new commercial / industrial buildings to the west.
1965	The majority of the site appears to be similar to that shown in the 1961 imagery with the exception of the northern most portion of the site where a large building (commercial / industrial in appearance) has been constructed which extends from Botany Road through to Cope Street.	The surrounding area appears similar to that shown in the 1961 imagery with the exception of some new high density residential buildings to the immediate east.
1970	The majority of the site appears to be similar to that shown in the 1965 imagery with the exception of the northern boundary of the site where a large building (commercial / industrial in appearance) has been constructed which extends from Botany Road through to Cope Street.	The surrounding area appears similar to that shown in the 1965 imagery with the exception a number of small buildings to the north-east which have been demolished.
1982	The majority of the site appears to be similar to that shown in the 1970 imagery.	The surrounding area appears similar to that shown in the 1970 imagery with the exception new high density residential tower buildings to the north-east, the demolition of some buildings to the north-west and some new commercial / industrial buildings to the west.
1991	The majority of the site appears to be similar to that shown in the 1982 imagery.	The surrounding area appears similar to that shown in the 1982 imagery with the exception of the construction of some new commercial / industrial buildings to the north-west.
2002	The image is somewhat unclear, however, the majority of the site appears to be similar to that shown in the 1991 imagery.	The image is somewhat unclear, however, the surrounding area appears similar to that shown in the 1991 imagery.
2017	The majority of the site appears to be similar to that shown in the 2002 imagery.	The surrounding area appears similar to that shown in the 2002 imagery.

4.3 Historical Title Search

Land titles and transfers obtained from the Land and Property NSW (through VJ Ralph & Co. City Legal Services) were reviewed in order to identify historical site ownership and the potential for historical contaminating activities.

A summary of the site ownership history of selected Lot/DPs is presented in **Table 5**. Copies of the Certificates of Title are included in **Appendix B1**.

The Lot/DPs were selected on the basis of available information which had identified a potential source of contamination. In addition, the current station box construction works being completed on the adjacent site were subject to an environmental site investigation and subsequent remediation action plan (RAP). Golder-Douglas had identified that there were several Lot/DPs which straddled both the site and the adjacent site and as such the majority of these were not included in this assessment.

Table 5: Summary of Land Title Information

Current Lot/DP	Cancelled Lot/DP	Comments
1/433969	6010-83	1949: Snider and Dean Theatres Pty Ltd 1956: Bohler Steels Pty Limited 1986: R W Basham Pty Limited
4/215751	9340-10	1962: Arianna Holdings Pty Limited Numerous leases from 1960s to 1980s to multiple parties, including newsagent, butcher, chemist
SP75492	8474-9	1963: Total Oil Products (Australia) Pty Limited 1985: Charles Faul and Aliza Faul, Mayer Fleish and Rivka Fleish 1986: Aliza Faul, Mayer Fleish and Rivka Fleish 1988: Ronfield Pty Limited
32/805384	11787-116	1972: Jorn and Company Pty Limited 1972: Ceylon Brothers Pty Limited 1987: Morara Pty Limited Multiple leases to Sylvia Knitwear (Fabrics) Pty Limited in 1972 Lease to Andrew Gross of factory unit 4 in 1988 Lease to (illegible) in 1989
1/27454	7578-88	1958: Robert Martin, of Eastwood, coppersmith 1962: Milton Hyam Ferry of Kensington, smash repairer & Sylvia Ferry his wife 1967: Lease to Robert George Innes of Kirrawee, panel beater 1970: John Goetjes of Waterloo, panel beater 1972: Chris Christodoulous of Concord, motor mechanic & Effie Christodoulous his wife, and Constatine Papageorge of Earlwood, motor mechanic & Helen Papageorge his wife 1985: Chris Christodoulous & Effie Christodoulous
2/205942	9090-172	1961: Edmund Absalom Willcocks of Waterloo, master grocer 1961: Lease to (illegible) and Co Pty Limited 1963: Lease to Sum Art Pty Limited 1967: Lease to John Hubert Gunter Goetjes motor mechanic 1970: Lease to John Hubert Gunter Goetjes motor mechanic 1973: Brentwood Productions Pty Limited 1975: WHF Investments Pty Limited 1976: Lease to Don Williamson Pty Limited 1979: Genogars (Holdings) Pty Limited
12/399757	7364-198	1957: Edgar Bragg & Sons Pty Limited (identified by internet search as printers) On-line search indicates occupation of the site until the land was resumed for the station construction

Current Lot/DP	Cancelled Lot/DP	Comments
2/27454	7487-61 & dealing 8175413	1958: Laszlo Vereckei of Waterloo, shoe manufacturer and Rosa Vereckei his wife 1968 Leslie Lionel Roberts of Kogarah, cleaning contractor and Alan Francis Wareham of Killarney Heights, cleaning contractor 1973: Longhurst & Andrew Pty Limited (possibly locksmiths based on on-line search) 1998: Lugeo Nita Nominees Pty Limited 2001: Lease to MYZ International Pty Ltd DP RAP (DP 2018) for the proposed Waterloo Station identified this lot as the location of a dry cleaners A review of Google Earth™ street level image, dated June 2017, shows this lot occupied by Waterloo Laundry (including drycleaning)
5/215751	-	Summarised from DSI for 59-63 Botany Road, Waterloo (EIA, November 2015) 1913: Charles Darcy, wine & spirit merchant 1915: Tom Raine and Percy Arundel Raine, real estate agents 1927: Quong Wing, cabinet manufacturer 1941: John Skinner, machinery merchant (then various Skinner family members, then J Skinner Holdings Pty Limited) 1992: Lachmandas Naraindas Bhojwani, Maya Lachmandas Bhojwani & Sanjay Lachmandas Bhojwani 1995: Gordon Lindsay, Scot Lindsay & Craig Lindsay, company directors 2013: Scot Lindsay & Craig Lindsay 2015: Scot Lindsay, Craig Lindsay & Scot Holdings Pty Ltd

4.4 Interviews with Site Personnel

Site personnel with knowledge of the historical and recent previous activities at the site were not available for interview at the time of the initial site inspection.

4.5 Previous Environmental Assessment Reports

The following historical reports were provided by Sydney Metro for review:

- Lotsearch 2016, Environmental Risk and Planning Report – Waterloo Metro Site, Waterloo NSW, dated 18 October 2016 (Lotsearch 2016);
- Environmental Investigations Australia 2015, Detailed Site Investigation – 59-63 Botany Road, Waterloo NSW, report reference E22749 AA_Rev0 dated 27 November 2015 (EIA 2015a);
- Environmental Investigations Australia 2015, Remediation Action Plan – 59-63 Botany Road, Waterloo NSW, report reference EA22749 AB_Rev0 dated 18 December 2015 (EIA 2015b);
- Environmental Investigations Australia 2016, Response to Auditor Review of Reports – 59-63 Botany Road, Waterloo NSW, dated 21 March 2016 (EIA 2016);
- Douglas Partners 2018, Remediation Action Plan - Sydney Metro City & South West - Tunnel and Station Excavation Works Package Proposed Waterloo Station, Botany Road and Cope Street, Waterloo, report reference 85608.14.R.004.Rev0, dated 13 April 2018 (DP 2018);

- Golder Douglas 2016, Geotechnical Data Report Sydney Metro City and Southwest Geotechnical Investigation, report reference PSC 00013/10701 (DP 2016a); and
- Golder Douglas 2016, Contamination Assessment Report - Tunnels and Station Excavations (TSE), Chatswood to Sydenham, report reference PSC 00013/10701 (DP 2016b).

Information relevant to the current investigation was obtained from the reports identified above. The reports were only considered with respect to information that is relevant to the objectives of this investigation. It has been assumed that the data presented in the reports are suitable for the purpose of the investigation and is reliable; however, no independent verification has been undertaken. A summary of the relevant information is detailed below.

Lotsearch 2016, Environmental Risk and Planning Report

The Lotsearch (2016) report provided an overview of the site history and environmental setting. The report included a list of historical business directories from 1950, 1970 and 1991 located on and within the site (refer to **Appendix B2**). A summary of the noteworthy historical businesses formerly located on-site is included in **Table 6**.

Table 6: Summary of Noteworthy Historical Businesses Formerly Located on Site

Year	Activity	Organisation	Premise
1950	Motor garages and/or engineers, panel beaters, motor painters and welder	Feneck, J.	101 Botany Road, Waterloo
	Woodworker and turner	Wadds, F.P.	63 Botany Road, Waterloo
	Footwear manufacturer / boot and shoe repairs	Taylor, C.S.	55 Botany Road, Waterloo
	Machinery dealer, merchant and/or importer	Skinner, J.	59-61 Botany Road, Waterloo
	Food product manufacturer	Mulhall and Higgs	87 Botany Road, Waterloo
	Motor carburettor and tuner	McDonnell, D. Pty Ltd	117 Botany Road, Waterloo
	Metal worker	Martin, Robert and Co.	79 Botany Road, Waterloo
	Furniture manufacturer	Hollitt, G. and Co.	55 Botany Road, Waterloo
	Box and case merchants and manufacturers	Clovelly Box Factory	69 Botany Road, Waterloo
	Motor electricians, and battery distributor, manufacturer and service station	Taylor, A. E. and T.E.B. Batteries	51 Botany Road, Waterloo
	Sheet metal worker	Hodge, Bass	67 Botany Road, Waterloo
	Dowel manufacturer, timber merchant, furnishings manufacturer and wholesaler and moulding manufacturers	Hallmark Manufacturing	87 Botany Road, Waterloo
1970	Motor garages and engineers	Total Service Station	69-83 Botany Road, Waterloo

Year	Activity	Organisation	Premise
	Office equipment manufacturers / distributors, data processing equipment manufacturers and address machine importers	Spicers Business Machines	128 Botany Road, Waterloo
	Food product manufacturers, processors and distributors	Solomon, R. and Co. Pty. Ltd.	136-144 Botany Road, Waterloo
	Electric motors dealers and/or wholesalers, sheet metal workers, and machinery dealers	Skinner, J. Pty. Ltd.	59-63 Botany Road, Waterloo
	Chemists manufacturing and/or wholesale	Sigma Pharmaceuticals Pty. Ltd.	89 Botany Road, Waterloo
	Store and packing room equipment manufacturers and/or distributors	Marfleet & Weight (Sales) Pty. Ltd	55B Botany Road, Waterloo
	Printer furnishers, ink manufacturers / importers and supplies	Alex Cowan Machinery	128 Botany Road, Waterloo
	Printers	Edgar Bragg & Sons Pty Ltd	130-134 Botany Road, Waterloo
	Motor panel beaters and motor painters	Continental Body Repairs Pty. Ltd.	65 Botany Road, Waterloo
	Steel merchants and machine knife manufacturers	Bohler Steels Pty. Ltd.	146 Botany Road, Waterloo
	Furniture manufacturers, retailers and upholstering	Artwood Furniture Pty. Ltd.	107 Botany Road, Waterloo
	Clothing manufacturing and/or wholesale	Arkabe Pty. Ltd.	168-170 Botany Road, Waterloo
	Footwear manufacturers	Verka Shot Co.	87 Botany Road, Waterloo
	Cleaners – general and industrial	Austral Window & General Cleaning Co.	87 Botany Road, Waterloo
1991	Motor garages and engineers	Joseph Bros Pty Ltd	129 Wellington Street, Waterloo
	Paper products, packaging material and tool manufacturers and/or distributers	Daines, Harry Pty Ltd	128 Cope Street, Waterloo
	Printers	Edgar Bragg & Sons Pty Ltd	130 Cope Street, Waterloo
	Motor panel beaters and/or spray painters	Car Builders Pty Ltd	65 Botany Road, Waterloo
	Boat, launch and/or yacht equipment	Basham, R. W. Pty. Ltd.	146 Cope Street, Waterloo
	Motor engineers	Chris & Con Motor Repairs	85 Botany Road, Waterloo

Environmental Investigations Australia 2015, Detailed Site Investigation – 59-63 Botany Road, Waterloo NSW, 27 November 2015

Environmental Investigations Australia (EIA) conducted a DSI at 59-63 Botany Road, Waterloo NSW which (at the time of the investigation) contained a vacant warehouse building (EIA 2015a). The investigation included the advancement of seven borehole locations, three of which were converted to groundwater monitoring wells. The investigation identified fill material up to 1.6 metres below ground level (m bgl) and groundwater at approximately 3 m bgl. Groundwater flow direction was inferred to flow to the south west.

EIA encountered fill material containing ash, glass, brick, metal and sandstone pieces in several bores. Underlying the fill material aeolian sands were encountered to a maximum depth of 7.5m bgl with silty clay underlying this. EIA encountered obstructions at three investigation locations which resulted in refusal. EIA were unable to establish the cause of the obstructions.

Elevated concentrations of heavy metals (primarily zinc, lead and copper) and benzo(a)pyrene (BaP) were identified in soil samples. Asbestos was also identified in one soil sample at a depth of 0.2-0.3 m bgl in fill. The concentrations of copper, lead and zinc exceeded ecological based criteria with lead also exceeded human health based criteria. BaP exceeded the ecological based criteria with carcinogenic PAHs exceeding the human health based criteria.

The results of the groundwater investigation indicated that zinc, nickel and lead were recorded at concentrations which exceeded the adopted assessment criteria at the site. PAHs, TRHs and BTEX were recorded at concentrations which were lower than the LOR. Chloroform was recorded at a detectable concentration however this was below the adopted criterion.

EIA reported that due to the underground obstructions the extent of the BaP and lead impacted fill at one location could not be established. In addition, the depth and quality of fill materials at two other locations could not be established. EIA reported that the asbestos impacted fill required further characterisation.

With respect to the groundwater investigation, EIA considered that the elevated concentrations of heavy metals were reflective of background water quality in the area.

EIA concluded that there were data gaps in the DSI which required further investigation. These were focused on the vertical and lateral extent of the heavy metal, asbestos and PAH contamination due to the presence of obstructions. EIA indicated that remediation was required and that the site can be remediated to render it suitable for proposed residential/commercial use.

Several recommendations were proposed by EIA which included the implementation of a remedial action plan (RAP) which would include additional investigations to target the data gaps.

Environmental Investigations Australia 2015, Remediation Action Plan – 59-63 Botany Road, Waterloo NSW, report reference EA22749 AB_Rev0, dated 18 December 2015

EIA prepared a RAP (EIA 2015b) for the site on the basis of the outcomes of the DSI (EIA 2015a). The RAP indicated that the proposed development for the site included a 2-3 storey mixed commercial and residential building with a single level basement.

EIA reported that the main objective of the RAP was to render the soils suitable for the proposed end land use and the proposed remediation strategy was to excavate and dispose offsite of the impacted soils.

In addition, the RAP indicated that a detailed hazardous materials survey should be completed, soil delineation focusing on asbestos contamination were required and in-situ waste classification was to be

completed. The RAP indicated that a site validation report will be prepared in accordance with relevant guidelines.

EIA proposed the use of different remediation criteria across the site based on the proposed development plan. The criteria proposed were those specified with the NEPM (NEPC 2013) for both human health and ecological receptors. In addition, waste classification criteria were proposed that would apply to the material identified for excavation and offsite disposal.

EIA proposed a site validation strategy which would be implemented during the remediation to establish if the remediation was successful.

Environmental Investigations Australia 2016, Response to Auditor Review of Reports – 59-63 Botany Road, Waterloo NSW, dated 21 March 2016

This document (EIA 2016) detailed the response EIA provided to the NSW EPA accredited Site Auditor, Mr Mike Nash of Douglas Partners, in relation to his review of the environmental related reports for the site. The review focused on the DSI and the RAP only and Mr Nash put forward 11 questions/comments in relation to these reports.

A summary of the key questions, EIA indicated that the source of the PAHs and heavy metals in the soils at the site were likely to be associated with the following:

- Quality of imported fill brought onto the site for levelling purposes during construction of the current building;
- Potential lead based paints used in the structures formerly present at the site; and
- That the fine grained gravel reported by EIA was likely to be ash, the source of which was considered to be uncontrolled imported fill.

In relation to the former laundry identified on site by Mr Nash, EIA reported that there was no manufacturing or repairs of washers and dryers and that the site was used for the sales, storage and testing of washes/dryers. As such there was limited potential for chlorinated solvents to be present on site. EIA also reported that chlorinated solvents were not identified during the groundwater investigation.

The remaining questions were generic in nature and mainly related to the implementation of the RAP and the validation strategy.

Douglas Partners 2018, Remediation Action Plan - Sydney Metro City & South West - Tunnel and Station Excavation Works Package Proposed Waterloo Station, Botany Road and Cope Street, Waterloo, report reference 85608.14.R.004.Rev0, dated 13 April 2018

Douglas Partners (DP) were engaged by JHCPB&G in July 2017 to produce a RAP to assist the construction works associated with the proposed Waterloo Station site (adjacent to the site). The RAP (DP 2018) was produced to provide a methodology to render the Waterloo Station site suitable for the proposed below ground railway station (Waterloo Station site).

The RAP was based on the results of previous contamination investigations, assessment of data gaps and the details of the proposed redevelopment. The RAP focused on the land parcels immediately to the east of the site, bound by Botany Road and Cope Street. The RAP was based on a proposed construction depth of 28 m bgl for the station box as provided by JHCPB&G.

DP reported that a Preliminary Site Investigation (PSI) and a DSI had previously been undertaken on the land which was the focus of the RAP.

In addition, DP reported that a hydrogeological model had been completed by Pells Sullivan Meynik (PSM) in March 2018. In their review DP reported that groundwater sampling detailed in the PSM report identified the presence of TPH, BTEX, naphthalene and lead in the groundwater.

DP provided a summary of the site history which indicated that there were a variety of industrial uses within and near to the land which included (selected) battery manufacturers, forging, chemical, mirrors, glass, electrical equipment, metal workers, motor painters/panel beaters, printers, blacksmiths and boilermakers. DP reported that dry cleaners, motor garages and service stations were located north east and up-gradient of the proposed Waterloo Station. A drycleaner was reported to exist on Botany Road to the west adjacent to the Waterloo Station site.

DP provided a summary of the PSI and DSI which indicated that surrounding and historical land uses had the potential to impact the Waterloo Station site as well as the potential presence of fill materials on this site. The DSI undertaken by DP involved the drilling/excavation at 12 locations (six test pits and six boreholes) and the installation of three groundwater wells. The results of the DSI indicated that fill material extended to a depth of 1.0 m bgl, with natural soils extending to at least 7.5 m bgl (sand/clayey sand/silt underlain by clay).

DP noted that ACM had been identified in soils throughout much of the northern part of the Waterloo Station site.

DP reported that the analytical results for the soils sampled during the DSI were within the adopted assessment criteria with the exception of ACM (bonded). PCE was also reported to be present in two soil samples located to the north east of the Church adjacent to the Waterloo Station site. DP also reported that ASS testing returned a positive result at a depth of 5.1 to 5.45 m bgl in one sample.

In relation to the groundwater at the Waterloo Station site, DP reported that TRHs were recorded at concentrations which were below the adopted assessment criteria. Some heavy metals, VOCs and OCPs were encountered in the groundwater. Of the VOCs, PCE, chloroform, chlorodibromomethane were recorded in the groundwater at the Waterloo Station site. PCE was recorded at a concentration which exceeded the low reliability interim working level (70 µg/L) (adopted assessment criteria). DP reported that the PCE was recorded in a groundwater well which was closest to the former dry cleaners on Botany Road.

DP concluded that some groundwater contamination was identified at the Waterloo Station site, however, it was considered unlikely to render it unsuitable for the proposed development but further investigation was recommended which included an additional soil, soil vapour and groundwater investigation.

In the RAP, DP provided conceptual site model (CSM) which identified the potential sources, receptors and pathways applicable to the Waterloo Station site.

Figures provided in the RAP detail the location of potential sources of contamination of which three are located on the site: historical garage and service station, laundry/dry cleaner and automotive centre. Excerpts from the RAP (DP 2018) are provided in **Appendix B2**.

5.0 REGULATORY AGENCY SEARCHES

The following published information sources were consulted in respect of the site:

- On-line records held by the NSW EPA, including:
  - The record of notices issued under the *CLM Act*;
  - The public register maintained under Section 308 of the *POEO Act*; and
  - The list of sites notified to the EPA under Section 60 of the *CLM Act*;
- Records relating to the storage of hazardous chemicals maintained by SafeWork, NSW (formerly identified as WorkCover, NSW).

5.1 NSW Environment Protection Authority

A search of on-line records held by the NSW EPA was completed. The search findings are presented below.

5.1.1 CLM Act Notices

An on-line search on 12 February 2019 of the EPA's "Record of Notices" issued under the *CLM Act* did not identify the site as being subject to current or prior notices.

A search of records for the suburb of Waterloo and the nearby suburbs of Alexandria, Redfern and Eveleigh identified a number of premises as having current or former notices issued under the provisions of the *CLM Act*. Premises within Waterloo and the nearby suburbs of Alexandria, Redfern and Eveleigh have been presented in **Appendix B1**. The result of the search, limited to premises within 500 m of the site, is presented in the **Table 7**.

Table 7: CLM Notice Search Results

Premises	Approximate distance from site	Comment
Former Gas N Go Alexandria, 10-20 Botany Road.	145 m north west	Former service station

It is considered that the premises identified in the above search would have a low potential to impact upon the site.

5.1.2 Notifications under Section 60 of the CLM Act

The NSW EPA maintains a "List of NSW contaminated sites notified to the EPA" under Section 60 of the *CLM Act*. Premises on this list indicate that the notifiers consider that the premises are contaminated and warrant reporting to EPA. The contamination at the premises may or may not be significant enough to warrant regulation by the EPA and the EPA reviews relevant site information before making a determination as to whether or not the premises warrants regulation. An on-line search for notified sites in Waterloo and the nearby suburbs of Alexandria, Redfern and Eveleigh was performed on 12 February 2019. A copy of the results of the notification search is provided in **Appendix B1**. The result of the search, limited to premises within 500 m of the site, is presented in **Table 8**.

Table 8: Section 60 Notification Search Results

Premise	Approximate distance from site	EPA management status
Proposed Construction Site, 2 John Street, Waterloo	150 m south	Regulation under *CLM Act* not required

Premise	Approximate distance from site	EPA management status
Alexandria Gardens, 146-156 Wyndham Street, Alexandria	80 m south-west	Regulation under *CLM Act* not required
Caltex Alexandria Service Station. 133 Wyndham St, cnr McEvoy Street	390 m south	Regulation under *CLM Act* not required
Formerly Gas N Go Alexandria, 10-20 Botany Road.	145 m north, north-west	Under assessment
Australian Technology Park, Henderson Road, Eveleigh	260 m west	Regulation under *CLM Act* not required
BP Service Station, 116 Regent Street, Redfern.	330 m north	Regulation under *CLM Act* not required

It is considered that the premises identified in the above search would have a low potential to impact upon the site.

5.1.3 EPLs under the POEO Act

The NSW EPA maintains a public register of premises subject to an Environment Protection Licence (EPL) under the *POEO Act*.

An on-line search for premises in Waterloo and the nearby suburbs of Alexandria, Redfern and Eveleigh was performed on 12 February 2019. A copy of the results of the notice search is provided in **Appendix B1**. The result of the search, limited to premises within 500 m of the site, is presented in **Table 9**.

Table 9: EPL Search Results

Premises	Approximate distance and direction from site	Activity type	Licence status
Sydney South West Area Health Service 150 Pitt Street, Redfern, NSW	350 m north east	Waste Activities	Surrendered 04 August 2000
Johnson & Johnson Research Pty Ltd. 1 Central Avenue, Eveleigh, NSW.	280 m west	Waste Activities	Surrendered 25 November 1999
Metromix Pty, Ltd. 131 Wyndham Street Alexandria, NSW	310 m south	Concrete works	No longer in force 27 June 2000

It is considered that the premises identified in the above search would have a low potential to impact upon the site.

5.1.4 Penalty Notices Issued under the POEO Act

The NSW EPA maintains a public register of Penalty Notices under the *POEO Act*.

A search of the Penalty Notices register issued by the NSW EPA under the *POEO Act* for premises in Waterloo and the nearby suburbs of Alexandria, Redfern and Eveleigh was performed on 12 February 2019. It was determined that no Notices had been issued for non-licensed premises within a 500 m radius of the site.

5.2 SafeWork NSW Licence to Store Hazardous Chemicals Search

A search of the SafeWork, NSW files for records relating to historical storage of hazardous chemicals at the site was requested by Golder-Douglas. A copy of the SafeWork, NSW search result is presented in **Appendix C.**

The storage of hazardous chemicals records identified that underground storage tanks (USTs) and above ground storage tanks (ASTs) were previously located that 69-83 Botany Road, Waterloo (a former service station). The details of the USTs and ASTs are included in **Table 10**.

Table 10: Former Dangerous Good Storage at 69-83 Botany Road

UST	Volume	Product	Installation
UST1	33,000 L	Petrol	Pre 1978
UST2	14,700 L	Petrol	Pre 1963
UST3	10,000 L	Diesel	Pre 1963
UST4	4,600 L	Petrol	Pre 1963
UST5	9,000 L	Petrol	Pre 1978 until 1988
AST	7,500	LPG	Pre 1988
Cylinders	190 kg	LPG	Pre 1972

The information provided by SafeWork NSW did not indicate that the USTs had been removed and that validation of their removal had been undertaken. Golder-Douglas were unable to confirm if the USTs remain insitu.

In addition to the USTs and AST at 69-83 Botany Road, Waterloo, hazardous chemicals records also identified a storage magazine at 146 Cope Street, Waterloo registered to R W Basham Pty Ltd, a marine products wholesaler. The magazine, used for the storage of signal smoke, signal devices, hand flares and parachute rockets, had a maximum storage capacity of 45 kg.

6.0 SITE HISTORY SUMMARY

A review of historical information indicates that there are multiple Lot/DPs across the site which have had a variety of land owners and lease's over time. The Lotsearch report (2016) provides a summary of the local business directory for addresses at the site and this information, summarised in **Table 6**, highlights the wide variety of businesses which have historically occupied the site and the surrounding area. Many of the former businesses have the potential to contaminate the site. Key former businesses and operations which were located on site include:

- Service station (northern block);
- Automotive related mechanical repairs (north and southern blocks);
- Drycleaners (northern block);
- Coppersmith, smash repair, motor mechanics (northern block); and
- Printers (adjacent to the former service station, partially on site).

Information provided within the DP RAP (DP 2018) indicates that in addition to the onsite land uses, there were a variety of industrial uses within close proximity to the site. These included battery manufacturers, metal forging, electrical equipment, metal works, motor painters/panel beaters, printers, blacksmiths and boilermakers. DP reported that drycleaners, motor garages and service stations were located north east and up-gradient of the proposed Waterloo Station. A review of the business directory information summarised in the Lotsearch report (2016) corroborates this information.

A review of previous environmental assessments indicates that contamination is present in the soils and groundwater underlying the site. Heavy metals, asbestos, polycyclic aromatic hydrocarbons, tetrachloroethylene and potential acid sulfate soils were detected in the soils underlying the site. In addition, some volatile organic compounds including PCE and chloroform, total petroleum hydrocarbons, benzene, toluene, ethylbenzene, xylenes, naphthalene and lead have been detected in the groundwater underlying the site.

During the site inspection it was noted that a water treatment plant was present on the site and it was confirmed by JHCPB&G that it was being used to treat water from the adjacent station box construction works.

A review of the historical aerial photography indicates that the site has been occupied by multiple smaller and medium to larger sized buildings. Demolition of multiple smaller type buildings occurred by 1961 after which the site appeared to have a similar layout as that prior to the demolition for the Sydney Metro Waterloo Station works.

Although there are some gaps in the site history, it is considered the available information was of sufficient standard to identify if potentially contaminating activities had occurred on the site.

7.0 DEVELOPMENT OF PROPOSED INTRUSIVE INVESTIGATION

7.1 Summary of Potential Site Contamination Issues

The key potential sources of contamination for the site are presented in **Table 11** along with associated PCoC.

An indicative potential impact ranking has been assigned to each of the potential sources of contamination. The risk ranking is intended to indicate the potential need to further assess soil, groundwater and/or ground gas in the vicinity of potential contamination source, at which stage transport mechanisms and pathways to potential receptors on and off the site would be evaluated. This initial ranking is not intended to infer magnitude or extent of impact (if any). Some identified potential impacts may not be present or may be relatively localised and minor in nature.

In summary, there is a **Moderate to High** potential for contamination impacts to soil and groundwater from historical and current on and off-site activities.

Table 11: Summary of Potential Sources of Contamination and Contaminants of Concern

Potential Contamination Source	Description	Potential Contaminants of Concern	Potential for Contamination Source
Former Total Service Station (USTs)	Potential for leakage/ spillage from underground fuel storage tanks and associated pipework.	TRH, BTEXN, PAHs, lead and phenols	Moderate - High
Former dry cleaner	Storage and use of chlorinated solvents associated with dry cleaning activities.	VOCs	Moderate - High
Former vehicle maintenance	Potential for leakage/spillage from servicing vehicles. Potential for waste oil storage.	TRH, BTEXN, PAHs, phenols, VOCs, solvents and metals	Moderate - High
Former Printers	Potential for leakage/spillage from storage and use of inks and solvents associated with cleaning processes.	TRH, BTEXN, VOCs, solvents	Moderate - High
Imported fill	Fill brought onto site from unknown sources. Potentially uncontrolled, may include waste materials.	TRH, BTEXN, PAH, metals, OCP, OPP, PCB & ACM	Moderate - High
Demolition of former buildings on site	Demolition waste from former buildings potentially buried on site. ACM has been detected in fill material on site.	ACM, lead	Low - Moderate
Former smash repair business	Impacts to soil horizons from spray booth, lubricant, degreasing, grease and oil/waste oil storage and handling and/or point source spills/leakage.	TRH, BTEX, PAH, phenols, VOC, SVOC, metals, phenols, ACM	Moderate

Potential Contamination Source	Description	Potential Contaminants of Concern	Potential for Contamination Source
Former woodworker business (carpenters / joinery)	Use of varnish, paints, glues and solvents.	VOCs, SVOCs, metals	Low - Moderate
Industrial activities / manufacturing	Potential impacts to site soil and groundwater from historical industrial activities including potential sheet metal work on-site.	TRH, BTEX, VOCs, metals, PAHs and asbestos	Low - Moderate
Off-site commercial / industrial sites	Potential for leakage/ spillage from unconfirmed underground fuel storage tanks or solvent use.	TRH, BTEXN, PAHs, VOCs, PAHs, lead and phenols	Low - Moderate
Acid sulfate soils	The site is located in an area of Class 5 ASS.	ASS and PASS	Low - Moderate

Notes:

TRH – Total recoverable hydrocarbons

BTEXN – Benzene, toluene, ethylbenzene, xylene, naphthalene

PAH – Polycyclic aromatic hydrocarbons

OCP – Organochlorine pesticides

OPP – Organophosphate pesticides

PCB – Polychlorinated biphenyls

VOC – Volatile organic compounds

SVOC – Semi volatile organic compounds

Metals - arsenic, cadmium, copper, chromium, lead, mercury, nickel and zinc

ACM – asbestos containing material

7.2 Sampling and Analysis Plan

The sampling and analytical plan was developed with consideration to:

- Site specific information associated with the former and current use of the site obtained during the desktop review;
- The current understanding of the proposed (concept) redevelopment works at the site; and
- The inferred end use of the site i.e. commercial (retail) at ground level and lower level structures (i.e. basements).

It was proposed to collect samples from locations targeting areas of potential historic contamination caused by the former industrial activities at the site whilst also providing spatial distribution of investigation locations across the site to characterise the underlying fill materials.

The number of investigation locations (19 locations) met the recommended sampling intensity in the NSW EPA (1995) *Sampling Design Guidelines* of 19 locations for a site of 0.80 hectares. The intrusive sampling program involved the following:

- Progression of nineteen soil bores by drilling (note, 2 soil bores were re-positioned due to obstructions);

- Installation and sampling of four new groundwater monitoring wells, and sampling of two existing groundwater monitoring wells; and
- Installation and sampling of six new soil vapour monitoring wells.

Table 12 presents the sampling plan and rationale which was undertaken at the site during the ESA

Table 12: Sampling Plan and Rationale

Investigation Location	Rationale	Media
SRT-BH408	Former automotive/vehicle repair	Soil and soil vapour
SRT-BH409	Former automotive/vehicle repair	Soil and groundwater
SRT-BH410, SRT-BH411, SRT-BH412	General site coverage, target fill material	Soil
SRT-BH413A	General site coverage, target fill material	Soil
SRT-BH414	South of former dry cleaners and target fill material	Soil
SRT-BH415, SRT-BH416, SRT-BH417	Former dry cleaners	Soil and soil vapour
SRT-BH418	General site coverage, target fill material	Soil
SRT-BH419 (SRT-BH419A)	South of former USTs (former service station)	Soil and groundwater
SRT-BH420	General site coverage	Soil and groundwater
SRT-BH421, SRT-BH422	Former automotive/vehicle repair	Soil and soil vapour
SRT-BH423	Former automotive/vehicle repair	Soil
SRT-BH424	Former automotive/vehicle repair	Soil
SRT-BH425	General site coverage	Soil
SRT-BH426	Target potential upgradient sources	Soil and groundwater

7.3 Contaminants of Potential Concern

In view of the potential sources of contamination the COPCs were considered to be wide ranging due to the multitude of former activities associated with the site, and are:

- Petroleum hydrocarbons (measured as total recoverable hydrocarbons (TRH));
- Benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN);
- Polycyclic aromatic hydrocarbons (PAHs);
- Polychlorinated biphenyls (PCBs);

- Heavy metals As, Cd, Cr, Cu, Pb, Hg, Ni and Zn[5];
- Phenols;
- Organochlorine and/or organophosphorus pesticides (OCPs/OPPs);
- Volatile organic compounds (VOCS);
- Poly and perfluoroalky substances (PFAS); and
- Asbestos.

Based on the potential presence of PASS/ASS the soil investigations was limited to the top 3.0 m bgl (to target fill material) however deeper samples were to be collected where possible.

7.4 Proposed Construction and Post Construction Activities

The site development plans provided by SM-TSE (including both above the station and on the site) are at concept stage only and are likely subject to significant change based on planning approvals.

The proposed end land use is described in **Section 1.3** summarised as a mixture commercial, retail and community underneath high density multi storey residential premises. In addition, it is proposed that there will be subsurface spaces (parking, retail and service/maintenance rooms) as well as publicly accessible open spaces.

7.5 Investigation Constraints

A site walkover was undertaken on 24 August 2018 where site conditions were observed by Golder-Douglas. At the time of the site inspection and throughout the investigation the site was in use as a construction compound for the storage of plant, equipment, a water treatment plant, stockpiling of soil, offices and was entirely sealed by concrete hardstand. The investigation locations were discussed with SMW TSE staff and JHCPB&G during the site inspection and prior to commencement of the investigation.

Information provided to Golder-Douglas in The Brief indicated that the site was an active worksite and that there were risks associated with disruption to construction activities. The potential risk to construction activities was mitigated through the positioning of sampling locations which JHCPB&G indicated was suitable based on planned site works, and by undertaking the investigation during ‘out of hours’. The ‘out of hours’ working period was restricted to weekend work and limited by planning conditions associated with the overall construction of the site.

The investigation sampling locations were positioned to target known potential sources of contamination (**Table 12**) as well as provide general site coverage. The location of the former service station on the central western boundary of the northern portion of the site was occupied by plant, machinery and a sediment basin at the time of the site investigation. In addition, the area to the east and south of the former service station were occupied by a key access road and stockpile area respectively. As a result some preferred sampling locations were not available.

SRT-BH408 was moved several metres to the north from the preferred sampling location due to the presence of a large generator in this portion of the site.

Sampling locations SRT-BH413 and SRT-BH414 (within the construction worksite stockpile area adjacent to the church) were restricted to the use of a hand auger as there was a risk of structural damage to the church

[5] As – Arsenic, Cd – Cadmium, Cr – Chromium, Cu – Copper, Ni – Nickel, Pb – Lead, Zn – Zinc, Hg - mercury

from vibrations generated using a drill rig. SRT-BH413 was repositioned as SRT-BH413A where the use of a drill rig was permitted.

SRT-BH425 and SRT-BH426 were repositioned to the south of the preferred locations due to the presence of construction equipment in these areas in addition to the presence of services along the boundary of the site.

Further information is provided in **Section 11.0** in relation to the soil investigation works.

8.0 PRELIMINARY CONCEPTUAL SITE MODEL (CSM)

A preliminary Conceptual Site Model (CSM), based on the information obtained through the Phase 1 historical review, was developed to direct the intrusive investigation stage of the assessment.

The preliminary CSM is detailed in **Table 13** and provides information on the potential sources of contamination, possible secondary sources of contamination, transport mechanisms, exposure pathways and potential receptors.

Identified historical and current land use activities that may have contributed to potential contamination sources in the site include:

- Former drycleaners (PCE identified in groundwater and soil);
- Former automotive/vehicle repair (north western portion);
- Former smash repair (north eastern portion);
- Former automotive/vehicle repair (south eastern portion);
- Former service station (Total Service Station – central portion);
- Multiple former commercial and light industrial activities across the site;
- Presence of fill material (unknown quality across the site);
- Presence of impacted fill (northern portion) (information obtained from previous DSI report);
- Presence of asbestos impacted fill in northern portion of the site; and
- Potential burial of demolition waste from former buildings/structures (site wide).

Potential site contamination sources located outside of the site boundary:

- Former commercial/industrial land use surrounding the site.

The preliminary CSM will be revised and updated on the basis of information obtained from the ESA including the assessment of the soil, soil vapour and groundwater analytical data.

The potential contaminant sources and migration or exposure pathways have the potential to form pollutant linkages which may pose a risk to a receptor. These are detailed in a preliminary CSM for the site as presented in **Table 13**.

For the purposes of this assessment, TfNSW indicated that the vertical limit of the investigation is 3.0 m bgl, however, exposure pathways to groundwater will need considered due to the shallow nature of groundwater in underlying the site.

Table 13: Preliminary Conceptual Site Model

Primary Sources	Secondary Sources	Transport Mechanisms	Exposure Pathways	Receptor
On-site sources				
• Former drycleaners (PCE identified in soil and groundwater). • Former automotive/vehicle repair (north western portion). • Former smash repair (north eastern portion). • Former automotive/vehicle repair (south eastern portion). • Former service station (Total Service Station – central portion). • Various former commercial and light industrial activities across the site. • Presence of fill material (unknown quality across the site). • Presence of impacted fill (northern portion) (information obtained from previous DSI report). • Presence of asbestos impacted fill in northern portion of the site. • Potential burial of demolition waste from former buildings/structures (site wide).	• Potentially impacted site soil, soil vapour and groundwater (presence of LNAPL and/or DNAPL). • Dissolved phase contaminant plume in groundwater. • Dissolved VOCs in soil gas and groundwater.	• Leaching of contaminants from fill/soil into groundwater. • Migration of dissolved phase contamination via groundwater. • Potential vapour intrusion through soil gas into sub surface infrastructure.	• Direct contact with soil/fill. • Incidental ingestion of soil/fill. • Inhalation of soil/fill derived dust. • Inhalation of volatile contaminants. • Contact with abstracted groundwater. • Inhalation of surface water or abstracted groundwater aerosols. • Ingestion of impacted abstracted groundwater.	• Site construction workers. • Future maintenance workers. • Future site users. • Users of abstracted groundwater for industrial processes (non potable). • Aquatic ecosystems. • Site infrastructure.
Off-site sources				
• Former commercial/industrial land use surrounding the site.	• Potentially impacted soil, soil vapour and groundwater. • Dissolved phase contaminants in groundwater. • Dissolved VOCs in ground gas and groundwater.	• Migration of groundwater from offsite sources into groundwater underlying the site. • Migration of soil vapour onto the site from offsite sources.	• Inhalation of volatile contaminants. • Ingestion of impacted surface water or abstracted groundwater. • Contact with abstracted groundwater. • Inhalation of abstracted groundwater aerosols.	• Site construction workers. • Future maintenance workers. • Future site users. • Users of abstracted groundwater for industrial processes (non potable). • Aquatic ecosystems. • Site infrastructure.

9.0 ADOPTED SITE ASSESSMENT CRITERIA

9.1 Human Health and Ecological Soil Assessment Criteria

The health and ecological based investigation levels documented in Schedule B1 of the *National Environmental Protection (Assessment of Contamination) Measure 1999*, as amended 2013 (NEPC 2013) have been adopted to screen the analytical results. These include the health investigation levels (HILs), health screening levels (HSLs), management limits (MLs), ecological screening levels (ESLs) and ecological investigation levels (EILs) which are summarised in the sections below.

Based on the concept design provided by Sydney Metro the exposure settings in the NEPM that are considered to be most relevant to the site are the '**commercial/industrial (Level D)'** land use settings.

The health based criteria have been established using the most conservative value specified in the HILs and HSLs, and the ecological based criteria have been established using the most conservative specified in the EILs and ESLs. The MLs have also been considered in the assessment.

Human health and ecological criteria for per- and poly-fluoroalkyl substances (PFAS) have been adopted from the *PFAS National Environment Management Plan* (HEPA 2018) (the NEMP).

The criteria are presented in **Table 14** below and in the summary soil analytical tables (**Table A1**).

9.1.1 Health Investigation Levels (HILs)

Health investigation levels (HILs) are generic assessment criteria for a range of metals and organic substances designed to be used in the first stage of the assessment of potential risks to human health from chronic exposure to contaminants. The HILs are generic to all soil types and have been developed for a range of land uses.

9.1.2 Health Screening Levels (HSLs)

The NEPM (NEPC 2013) provides health screening levels (HSLs) for petroleum hydrocarbons and asbestos.

HSLs for petroleum hydrocarbons will be used to assess chronic human health risks of petroleum hydrocarbon impact via the vapour intrusion exposure pathway. The HSLs are also considered to be protective of direct contact. Soil HSLs are provided in the NEPM (NEPC 2013) for a variety of exposure settings based on land use, depth of impact and soil type. The NEMP (NEPC 2013) provides HSLs for the F1 (C_6-C_{10}) and F2 (>C_{10}-C_{16}) hydrocarbon fractions and for benzene, toluene, ethylbenzene, xylene and naphthalene (BTEXN). Where appropriate, the health risk of potential exposure via direct contact for F3 (>C_{16}-C_{34}) and F4 (>C_{34}-C_{40}) hydrocarbon fractions have been assessed against guidance provided in CRC CARE (2011). In addition to the commercial / industrial land use setting, guidance for exposure to workers in trenches have been considered through the application of the CRC CARE (2011) HSLs for Intrusive Maintenance Workers for the vapour intrusion exposure pathway (or the direct contact pathway for F3 and F4).

It is noted that the HSLs for petroleum contaminants (TRH) are based on assumed sources of impact being consistent with typical fresh (not weathered or degraded) Australian petrol/diesel fuels.

As per section 2.4.8 Schedule B1 of the NEPM (NEPC 2013) HSLs are applicable to ground floor land use in that if the vapour exposure risk has been assessed as acceptable for ground floor land use, then it can be assumed that it is also acceptable for the floors above. In addition, the NEPM (NEPC 2013) also states that where non-residential land uses exist i.e. car parking, commercial, Level D (commercial/industrial) assessment criteria should be applied.

The HSLs for asbestos documented in the NEPM (NEPC 2013) provide specific guidance for the assessment of asbestos in soils based on the Western Australian Department of Health (DoH) *Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia* (WA DoH 2009). The DoH Guidelines identify three groups of asbestos contamination:

- Asbestos Containing Material (ACM): asbestos which is bound in a matrix (in sound condition) which cannot pass through a 7 mm x 7 mm sieve;
- Fibrous Asbestos (FA): friable asbestos material, such as severely weathered ACM and loose fibrous material such as insulation products. FA is defined as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure; and
- Asbestos Fines (AF): includes free fibres of asbestos, small fibre bundles and ACM fragments that pass through a 7 mm x 7 mm sieve.

The HSLs for asbestos have been adopted for the purpose of this assessment.

9.1.3 Management Limits

The NEPM (NEPC 2013) includes 'Management Limits' that are designed to avoid or minimise the potential effects of petroleum hydrocarbons such as formation of observable light non-aqueous phase liquids (LNAPL), fire and explosive hazards and effects on buried infrastructure e.g. penetration of, or damage to, in-ground services by hydrocarbons.

The management limits presented within the NEPM (NEPC 2013) were adopted from the Canada-wide standard for Petroleum Hydrocarbons (PHC) in soil (referred to as the 'CWS PHC', CCME 2008). The management limits were derived within the CCME to address various scientific, technical and socio-economic factors other than chronic toxicity of PHC to human and ecological receptors.

The application of the adopted Management Limits requires consideration of site-specific factors such as the depth of building basements and services and depth to groundwater. When the management limits are exceeded, further site-specific assessment and management may enable any identified risk to be addressed. The NEPM (NEPC 2013) also notes that the presence of TRH contamination at the levels of the management limits does not imply that there is no need for administrative notification or controls in accordance with jurisdiction requirements.

The NEPM (NEPC 2013) includes management limits for both coarse and fine grained soils. The most conservative value (coarse grained soils) has been adopted for screening purposes.

9.1.4 Aesthetics

Section 3.6.2, Schedule B1 of the NEPM (NEPC 2013) indicates an assessment of aesthetics would be required if there are strong residual petroleum hydrocarbon odours in soil. There is no prescriptive guidance on what the assessment should entail. The NEPM (NEPC 2013), however, indicates: 'assessment requires balanced consideration of the quantity, type and distribution of foreign material or odours in relation to the specific land use and it's sensitivity.'

General assessment considerations include:

- That chemically discoloured soils or large quantities of various types of inert refuse, particularly if unsightly, and may cause ongoing concern to site users;
- The depth of the materials, including chemical residues, in relation to the final surface of the site; and
- The need for, and practicality of, any long-term management of foreign materials.

Aesthetics were assessed as follows:

- Olfactory impacts were assessed qualitatively and with the use of a field portable Photo-Ionisation Detector (PID); and
- Evidence of staining, discolouration and anthropogenic material was assessed through visual inspection of excavation surfaces, with findings recorded on field notes and through photographic records.

9.1.5 Ecological Investigation Levels (EILs)

Generic EILs are provided for lead, arsenic, dichlorodiphenyltrichloroethane (DDT) and naphthalene in the NEPM (NEPC 2013). The generic EILs are independent of soil type.

Site specific EILs for chromium (III), copper, nickel and zinc can be calculated from the sum of the ambient background concentration (ABC) of the contaminant and on the added contaminant limit (ACL), which is based on soil specific properties such as pH, cation exchange capacity (CEC) and clay content. The ABC can be determined by measuring the concentration in a soil sample collected at a reference site not impacted by the contaminant. Where a reference site cannot be determined the ABC can be estimated based on urban metal levels as specified in the NEPM (NEPC 2013).

Site specific EILs were calculated for chromium (III), nickel and zinc using the CSIRO developed 'EIL Calculation Spreadsheet'[6]. As a site specific EIL was not calculated for copper the lower limit for aged contamination presented in the NEPM (NEPC 2013) was adopted[7].

9.1.6 Ecological Screening Levels (ESLs)

The NEPM (NEPC 2013) includes ecological screening levels (ESLs) for selected petroleum hydrocarbon compounds and total petroleum hydrocarbon fractions for assessment of risk to terrestrial ecosystems. ESLs are provided for coarse and fine soils, and are relevant to the root zone in soil, corresponding to the top 2 m of the finished level of a site.

The most conservative value (coarse grained soils for TRH, benzene, toluene, ethylbenzene and benzo(a)pyrene, and fine grained soils for xylenes) has been adopted for screening purposes.

Table 14: Adopted Soil Criteria - Commercial/Industrial Land Use

Analyte	HIL D	HSL D [1]	HSL Main. Worker [2]	Proposed health-based criteria [3]	EIL	ESL [4]	Proposed ecological-based criteria	ML [5]
TRH								
F1 (C_6-C_{10})	-	-	-	-	-	-	-	700
F1 (C_6-C_{10}) less BTEX	-	260	NL	260	-	215 [6]	215	-
F2 (>C_{10}-C_{16})	-	-	-	-	-	170 [7]	170	1,000
F2 (>C_{10}-C_{16}) less naphthalene	-	20,000	NL	20,000	-	-	-	-

[6] Available at http://www.nepc.gov.au/nepms/assessment-site-contamination/toolbox

[7] Refer to Schedule B5a, Table A1

Analyte	HIL D	HSL D [1]	HSL Main. Worker [2]	Proposed health-based criteria [3]	EIL	ESL [4]	Proposed ecological-based criteria	ML [5]
F3 (>C_{16}-C_{34})	-	27,000	85,000	27,000	-	1,700	1,700	3,500
F4 (>C_{34}-C_{40})	-	38,000	120,000	38,000	-	3,300	3,300	10,000
BTEXN								
Benzene	-	3	77	3	-	75	75	-
Toluene	-	99,000 [14]		NL	-	135	135	-
Ethylbenzene	-	27,000 [14]		NL	-	165	165	-
Xylene	-	230	81,000 [14]	230	-	95	95	-
Naphthalene	-	11,000 [14]		NL	370	-	370	-
Heavy Metals								
Arsenic	3,000	-	-	3,000	160	-	160	-
Cadmium	900	-	-	900	-	-	-	-
Chromium [8,9]	3,600	-	-	3,600	540	-	540	-
Copper [10]	240,000	-	-	240,000	85	-	85	-
Lead	1,500	-	-	1,500	1,800	-	1,800	-
Mercury (inorganic)	730	-	-	730	-	-	-	-
Nickel [8]	6,000	-	-	6,000	95	-	95	-
Zinc [8]	400,000	-	-	400,000	440	-	440	-
PAHs								
Naphthalene	-	NL	-	NL	370	-	370	-
BaP [11]	-	-	-	-	-	1.4	1.4	-
BaP TEQ [12]	40	-	-	40	-	-	-	-
Total PAH	4,000	-	-	4,000	-	-	-	-
PCBs								
Total PCB	7	-	-	7	-	-	-	-

Analyte	HIL D	HSL D [1]	HSL Main. Worker [2]	Proposed health-based criteria [3]	EIL	ESL [4]	Proposed ecological-based criteria	ML [5]
OCPs & OPPs								
Aldrin + dieldrin	45	-	-	45	-	-	-	-
Chlordane	530	-	-	530	-	-	-	-
DDD + DDE + DDT	3,600	-	-	3,600	-	-	-	-
DDT	-	-	-	-	640	-	640	-
Endosulfan	2,000	-	-	2,000	-	-	-	-
Endrin	100	-	-	100	-	-	-	-
Heptachlor	50	-	-	50	-	-	-	-
HCB	80	-	-	80	-	-	-	-
Methoxychlor	2,500	-	-	2,500	-	-	-	-
Mirex	100	-	-	100	-	-	-	-
Chlorpyriphos	2,000	-	-	2,000	-	-	-	-
Phenols								
Phenol	240,000	-	-	240,000	-	-	-	-
Cresols	25,000	-	-	25,000	-	-	-	-
Pentachlorophenol	660	-	-	660	-	-	-	-
Asbestos								
Bonded ACM	-	0.05%	-	0.05%	-	-	-	-
Fibrous asbestos and asbestos fines	-	0.001%	-	0.001%	-	-	-	-
All forms of asbestos	-	No visible asbestos for surface soil	-	No visible asbestos for surface soil	-	-	-	-

Analyte	HIL D	HSL D [1]	HSL Main. Worker [2]	Proposed health-based criteria [3]	EIL	ESL [4]	Proposed ecological-based criteria	ML [5]
PFAS [13]								
PFOS+PFHxS	20	-	-	20	-	-	-	-
PFOA	50	-	-	50	-	-	-	-
PFOS	-	-	-	-	0.14	-	0.14	-

Notes
Criteria in mg/kg unless otherwise indicated.
- No criteria provided.
NL non limiting.
w/w weight for weight.
1 HSL-D based on vapour intrusion risk (NEPC 2013), except values adopted for F2, F3 and F4 based on health screening levels for direct contact (CRC CARE 2011). HSL for sand soil type, depth 0m to <1m adopted as a conservative measure
2 HSL Intrusive Maintenance Worker based on vapour intrusion risk (CRC CARE 2011), except for values F3 and F4 where health screening levels for direct contact (CRC CARE 2011) are adopted. HSL for sand soil type, depth 0m to <2m adopted as a conservative measure.
3 Proposed health based criteria for TRH fractions consider HILs and HSLs.
4 The most conservative of the ESLs for coarse or fine grained soils have been adopted.
5 MLs for F1 and F2 include BTEX and naphthalene respectively. The most conservative of the MLs for coarse or fine grained soils have been adopted.
6 ESL for TRH F1 minus BTEX.
7 ESL for TRH F2 includes naphthalene.
8 EIL calculated using site specific soil qualities.
9 HIL for Cr VI, EIL for Cr III.
10 EIL for copper is based on the lower limit for the aged added contaminant limit presented in the NEPM (NEPC 2013).
11 Benz(a)pyrene.
12 Toxicity equivalent quotient.
13 PFAS criteria adopted from the PFAS National Environmental Management Plan (NEMP) (Heads of Environmental Protection Authorities Australia and New Zealand (HEPA), January 2018).
14 HSL-D based on direct contact health screening levels (CRC CARE 2011).

9.2 Residential Land Use

9.2.1 Human Health Based Criteria

Consideration of potential future residential land use at the site has been included in this report on the basis that redevelopment designs for the site are at concept stage only. It is possible that designs will change and land use at the site, particularly at ground level, will be for a more sensitive setting i.e. residential. The NEPM (NEPC 2013) provides both HILs and HSLs criteria applicable to a residential land use setting for the following:

- Residential with gardens/accessible soil (i.e.low density housing, includes children's day care centres, preschools and primary schools) (HIL/HSL A); and
- Residential with minimal opportunities for soil access (i.e. high-rise buildings and flats) (HIL/HSL B).

For the purposes of this assessment '**HIL B'** has been selected as the most appropriate land use scenario as it is considered unlikely that future development will involve low density residential housing with accessible gardens. HIL B land use scenario is based on a residential scenario with minimal opportunities for soil access i.e. multi-storey apartments / units where there are living areas at ground level (with ground floor slab above subsurface structures such as basements and car parks) with small areas of landscaping or lawns. It is expected that redevelopment of the site will involve basement excavations across the majority of the site.

The adopted criteria for the assessment of human health in a residential land use scenario is presented in **Table A2** and the results of the investigation in this context are discussed in **Section 14.3**.

9.2.2 EILs

Generic EILs are provided for lead, arsenic, dichlorodiphenyltrichloroethane (DDT) and naphthalene in the NEPM (NEPC, 2013). The generic EILs are independent of soil type.

Site specific EILs for chromium (III), copper, nickel and zinc can be calculated from the sum of the ambient background concentration (ABC) of the contaminant and on the added contaminant limit (ACL), which is based on soil specific properties such as pH, cation exchange capacity (CEC) and clay content. The ABC can be determined by measuring the concentration in a soil sample collected at a reference site not impacted by the contaminant. Where a reference site cannot be determined the ABC can be estimated based on urban metal levels as specified in the NEPM (NEPC 2013).

Site specific EILs for a residential land use scenario were calculated for chromium (III), nickel and zinc using the CSIRO developed 'EIL Calculation Spreadsheet'[8]. As a site specific EIL was not calculated for copper the lower limit for aged contamination presented in the NEPM (NEPC 2013) was adopted[9].

9.2.3 ESLs

The NEPM (NEPC 2013) includes ecological screening levels (ESLs) for selected petroleum hydrocarbon compounds and total petroleum hydrocarbon fractions for assessment of risk to terrestrial ecosystems. ESLs are provided for coarse and fine soils, and are relevant to the root zone in soil, corresponding to the top 2 m of the finished level of a site.

The most conservative value for 'urban residential and public open space' land use scenario (coarse grained soils for TRH, benzene, toluene, ethylbenzene and benzo(a)pyrene, and fine grained soils for xylenes) has been adopted for screening purposes.

9.3 Acid Sulfate Soils

Acid sulfate soil will be assessed against the action criteria presented in Section 4.3 in the NSW Acid Sulfate Soils Management Advisory Committee (ASSMAC) Acid Sulfate Soils Assessment Guidelines (ASSMAC 1998). The ASSMAC action criteria are presented in **Table 15**. The adopted assessment values along with the laboratory results are summarised in **Table C**.

Table 15: Acid Sulfate Soil Action Criteria (ASSMAC 1998)

Soil Type / Test	ASS – 1 to 1,000 tonnes disturbed	ASS – Greater than 1,000 tonnes disturbed
Coarse textured soil		
Sulfur Trail (% S oxidisable)	0.03	0.03
Acid Trail (mol H+/tonne)	18	18
Medium textured soil		
Sulfur Trail (% S oxidisable)	0.06	0.03
Acid Trail (mol H+/tonne)	36	18
Fine textured soil		
Sulfur Trail (% S oxidisable)	0.1	0.03

[8] Available at http://www.nepc.gov.au/nepms/assessment-site-contamination/toolbox

[9] Refer to Schedule B5a, Table A1

Soil Type / Test	ASS – 1 to 1,000 tonnes disturbed	ASS – Greater than 1,000 tonnes disturbed
Acid Trail (mol H+/tonne)	62	18

9.4 Waste Classification Criteria

Soil wastes generated during the construction works would require assessment and classification prior to off-site disposal in accordance with the NSW EPA *Waste Classification Guidelines: Part 1 Classifying waste* (EPA 2014) (the *Waste Guidelines*). The wastes would fall into one of the following classifications as defined in the *Waste Guideline*:

- **General Solid Waste Non-Putrescible (GSW) –** GSW is waste (such as surplus excavated soil) which contains contaminant concentrations less than or equal to the GSW contaminant threshold (CT1[10]) values or contains specific contaminant concentrations (SCC) and toxicity characteristics leaching procedure (TCLP) test concentrations less than or equal to the respective SCC1[11] and TCLP1 threshold values;
- **Restricted Solid Waste (RSW) –** RSW is waste (such as surplus excavated fill/soil) which contains contaminant concentrations greater than the GSW criteria, however less than or equal to the RSW contaminant threshold CT2 values or contains SCC and TCLP test concentrations less than or equal to the respective SCC2 and TCLP2 threshold values;
- **Hazardous Waste (HW)** – HW is waste (such as surplus excavated fill/soil) which contains contaminant concentrations greater than the RSW criteria, or a material which has been pre-classified as hazardous waste by the EPA;
- **Special Waste (Asbestos)** – This is waste (such as surplus excavated fill/soil) that contains asbestos. Soils containing asbestos waste also need to be chemically assessed for other potential contaminants, such that they can be classified as either GSW, RSW or HW in accordance with the *Waste Guidelines*; and
- **Potential Acid Sulfate Soils** – Soils will be required to undergo analysis for the PASS as per Part 4 of the *Waste Classification Guidelines* (NSW EPA 2014). Specific management of soils which are identified as PASS/ASS is required prior to disposal at a licenced facility.

The adopted assessment values along with the laboratory results are summarised in **Table B**.

[10] EPA 2014 Table 1 Contaminant Threshold Values (CT1 and CT2) for classifying waste by chemical assessment without the leaching (TCLP) test

[11] EPA 2014 Table 2 Leachable concentration (TCLP) and Specific Contaminant Concentration (SCC) values for classifying waste by chemical assessment

9.5 Groundwater Criteria

The following criteria have been considered to establish the proposed human health and ecological criteria to assess groundwater quality:

- Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 (ANZG 2018);
- Australian Drinking Water Guidelines (the ADWG) (NHMRC 2011);
- Recreational contact (NHMRC 2008);
- Groundwater HSLs for BTEXN specified in the NEPM (NEPC 2013) for typical fuel mixtures, sand 2 to <4m values adopted; and
- PFAS National Environment Management Plan (the NEMP) (HEPA 2018).

As the Australian Drinking Water Guidelines (NHMRC 2011) do not provide any values for TRHs the United States Environment Protection Agency (US EPA) Regional Screening Levels for Chemical Contaminants at Superfund Sites (US EPA 2018) for tap water (refer to **Table 16**) were adopted as they consider ingestion, dermal and inhalation pathways from direct exposure. The Screening Levels are risk-based concentrations derived from standardised equations combining exposure information assumptions with US EPA toxicity data, and can be used to assess if concentrations of a chemical are present that warrant further investigation. As indicated in **Table 16** the TRH criteria for tap water is based on speciated TRH aromatic and aliphatic fractions. As the US EPA (2018) TRH fractions differ from the Australian analytical fractions professional judgement would be applied in allocating the US EPA screening levels to the site data. The low and medium aromatic TRH fractions are more conservative than their respective aliphatic TRH fractions. However, both benzene and naphthalene (upon which the aromatic screening levels are based) will be individually assessed and therefore the low and medium aliphatic TRH fractions have been adopted.

Table 16: US EPA RSLs for Tap Water

TRH Fraction	Equivalent Number of Carbon Atoms	Representative Compound	Tap Water Criteria (mg/L)*	Australian Analytical (NEPM) Fraction Assessed
Low aliphatic	C_5 - C_8	n-hexane	1.3	Adopted for the F1 Fraction
Medium aliphatic	C_9 - C_{18}	Hydrocarbon streams	0.1	Adopted for the F2 Fraction
High aliphatic	C_{19} - C_{32}	White mineral oil	60	Not adopted
Low aromatic	C_6 – C_8	Benzene	0.033	Not adopted
Medium aromatic	C_9 - C_{16}	2-methylnapthalene/ naphthalene	0.0055	Not adopted
High aromatic	C_{17} - C_{32}	Fluoranthene	0.8	Adopted for the F3, F4 Fraction

*Based on Hazard Index of 1, consistent with NEPM (2013) approach.

For the purpose of assessing risks related to primary contact recreation (e.g. swimming in which there is a high probability for water being swallowed), the National Health and Medical Research Council (NHMRC 2008) recommend screening the data relative to the health-based ADWG (revised in NHMRC 2011) criteria with a factor of 10x applied to account for the limited ingestion potential relative to the drinking water exposure

assumptions. The 10x factor has been applied to drinking water guidelines derived by the ADWG (NHMRC 2011) to obtain screening levels for recreational use.

The criteria presented in **Table 17** will depend on the nature of the receiving water body (i.e. marine water) and on the potential use of the groundwater. For conservative purposes the lowest of the NEPM HSLs, ADWG, recreational contact guidelines and US EPA RSLs have been included as the proposed human health water criteria. However, should these values be exceeded an assessment of site specific data including depth to groundwater, groundwater yield, salinity, and licensed groundwater uses in the vicinity of the sites should be considered.

Table 17: Adopted Groundwater Assessment Criteria (Marine Water)

Analyte	95% Protection of species	Commercial / Industrial HSL D	Drinking Water	Recreational Contact
	ANZG 2018	NEPM 2013	NHMRC 2011	NHMRC 2008
TRH				
F1 (C_6-C_{10})	-	6,000	1,300 [1]	13,000
F2 (>C_{10}-C_{16})	-	NL	100 [1]	1,000
F3 (>C_{16}-C_{34})	-	-	800 [1]	8,000
F4 (>C_{34}-C_{40})	-	-	800 [1]	8,000
BTEXN				
Benzene	700	5,000	1	10
Toluene	180 [3]	NL	800	8,000
Ethylbenzene	5 [3]	NL	300	3,000
o-xylene	350 [3]	NL	600	6,000
m-xylene	75 [3]	NL		
p-xylene	200 [3]	NL		
Naphthalene	70	NL	-	-
Heavy Metals				
Arsenic	24 [4] / 13 [5]	-	10	100
Cadmium	0.7 [2]	-	2	20
Chromium (as Cr VI)	4.4	-	50	500
Copper	1.3	-	2,000	20,000
Lead	4.4	-	10	100
Mercury (inorganic)	0.1 [2]	-	1	10
Nickel	7 [2]	-	20	200

Analyte	95% Protection of species	Commercial / Industrial HSL D	Drinking Water	Recreational Contact
	ANZG 2018	NEPM 2013	NHMRC 2011	NHMRC 2008
Zinc	15	-	-	-
PAHs				
Anthracene	0.1 [3]	-	-	-
Naphthalene	50 [2]	NL	-	-
Benzo(a)pyrene	0.1 [3]	-	0.01	0.1
Fluoranthene	1 [3]	-	-	-
Phenanthrene	0.6 [3]	-	-	-
OCPs				
Aldrin	0.003 [3]	-	0.3	3
Dieldrin	0.01 [3]	-		
Chlordane	0.001 [3]	-	2	20
DDE	0.0005 [3]	-	-	-
DDT	0.0004 [3]	-	9	90
Endosulfan	0.005 [2]	-	20	200
g-BHC (Lindane)	0.007 [3]	-	10	100
Endrin	0.004 [2]	-	-	-
Heptachlor	0.0004 [3]	-	0.3	3
Methoxychlor	0.004 [3]	-	300	3,000
Mirex	0.04 [3]	-	-	-
OPPs				
Azinphos Methyl	0.01 [3]	-	30	300
Chlorpyrifos	0.009	-	10	100
Demeton-S-methyl	4 [3]	-	-	-
Diazinon	0.01 [3]	-	4	40
Dimethoate	0.15 [3]	-	7	70
Fenitrothion	0.001 [3]	-	-	-
Malathion	0.05 [3]	-	70	700
Parathion	0.004 [3]	-	2	20

Analyte	95% Protection of species	Commercial / Industrial HSL D	Drinking Water	Recreational Contact
	ANZG 2018	NEPM 2013	NHMRC 2011	NHMRC 2008
Chlorfenvinphos	-	-	2	20
Dichlorvos	-	-	5	50
Ethion	-	-	4	40
Fenthion	-	-	7	70
Pirimphos-ethyl	-	-	0.5	5
Phenols				
2,3,4,6-Tetrachlorophenol	10 [3]	-	-	-
2,4,5-Trichlorophenol	4 [3]	-	-	-
2,4,6-Trichlorophenol	3 [3]	-	20	200
2,4-Dichlorophenol	120 [3]	-	200	2,000
2,6-Dichlorophenol	34 [3]	-	-	-
2-Chlorophenol	340 [3]	-	300	3,000
Pentachlorophenol	11 [2]	-	10	100
2,4-Dimethylphenol	2 [3]	-	-	-
2-Nitrophenol	2 [3]	-	-	-
4-Nitrophenol	58 [3]	-	-	-
Phenol	400	-	-	-
PCBs				
Aroclor 1242	0.3 [3]	-	-	-
Aroclor 1254	0.01 [3]	-	-	-
VOCs				
1,4-Dichlorobenzene	60 [3]	-	40	400
1,2,3-Trichlorobenzene	3 [3]	-	-	-
1,2,4-Trichlorobenzene	20 [2]	-	-	-
1,2-Dichlorobenzene	160 [3]	-	1,500	15,000
1,3-Dichlorobenzene	260 [3]	-	-	-
Cumene (isopropylbenzene)	30 [3]	-	-	-
1,1,2,2-Tetrachloroethane	400 [3]	-	-	-

Analyte	95% Protection of species	Commercial / Industrial HSL D	Drinking Water	Recreational Contact
	ANZG 2018	NEPM 2013	NHMRC 2011	NHMRC 2008
1,1,1-Trichloroethane	270 [3]	-	-	-
1,1,2-Trichloroethane	1,900	-	-	-
1,2-dichloroethane	1,900 [3]	-	3	30
1,1-dichloroethene	700 [3]	-	30	300
1,2-Dichloroethene	-	-	60	600
1,2-Dichloropropane	900 [3]	-	-	-
1,3-Dichloropropane	1,100 [3]	-	-	-
1,3-dichloropropene	0.8 [3]	-	100	1,000
Carbon disulfide	20 [3]	-	-	-
Carbon tetrachloride	240 [3]	-	3	30
Chloroform	370 [3]	-	-	-
Dichloromethane	4,000 [3]	-	4	40
Hexachlorobutadiene	-	-	0.7	70
Hexachloroethane	290 [3]	-	-	-
Pentachloroethane	80 [3]	-	-	-
Tetrachloroethene	70 [3]	-	50	500
Trichloroethene	330 [3]	-	-	-
Vinyl chloride	100 [3]	-	0.3	3
Chlorobenzene (monochlorobenzene)	55 [3]	-	300	3,000
Styrene	-	-	30	300
Bromomethane (Bromide)	-	-	1	10
PFAS [6]				
PFOS+PFHxS	-	-	0.07	0.7
PFOS	0.00023 [2]	-	-	-
PFOA	19 [2]	-	0.56	5.6
Cations, Anions and Nutrients				
Fluoride	-	-	1.5	15

Analyte	95% Protection of species	Commercial / Industrial HSL D	Drinking Water	Recreational Contact
	ANZG 2018	NEPM 2013	NHMRC 2011	NHMRC 2008
Ammonia (as N)	910	-	-	-

Notes:

All criteria in µg/L

-: no criterion

NL: not limiting

1: US EPA RSL (2018) Tap water values

2: 99% protection of species trigger value applied for compounds with bioaccumulating nature

3: Unknown reliability trigger values taken from ANZG 2018

4: As III

5: As IV

6: PFAS criteria adopted from the PFAS National Environmental Management Plan (NEMP) (Heads of Environmental Protection Authorities Australia and New Zealand (HEPA), January 2018)

9.6 Soil Vapour Criteria

9.6.1 Commercial Industrial Land Use Scenario

Where available, soil vapour screening levels have been sourced from the NEPM (NEPC 2013). The soil vapour HSLs for vapour intrusion HSL D (commercial / industrial land use) are considered the most appropriate for soil vapour analytical results. The HSLs are also soil type and depth dependent. Based on the soil type encountered, a coarse soil type (sand) has been assumed. This is also the most conservative criteria.

The analytical results will also be initially screened against the interim soil vapour health investigation levels (HILs) for volatile organic chlorinated compounds (VOCs) published in the NEPM (NEPC 2013) for commercial / industrial land uses (i.e. Tier 1 screening assessment).

Should the vapour monitoring results exceed the Tier 1 trigger values, the future management of the identified contamination may need to be supported by a Tier 2 quantitative human health risk assessment (HHRA). The approach taken for the quantitative assessment of human health risks would be in accordance with guidelines published by enHealth (2012)[12] and the ASC NEPM (NEPC 2013). This assessment would also help determine if an active management approach is required (i.e. remediation) and determine what site specific trigger values (SSTLs) need to be achieved through any future remediation or management actions. The adopted investigation levels for the soil vapour investigation are summarised in **Table 18**.

Table 18: Summary of Soil Vapour Screening Levels – Commercial Industrial Land Use

Analyte	HSL D, 0-1 m, Sand	HSL D, 1-2 m, Sand	HIL D
TRH			
F1 (C_6-C_{10} less BTEX)	680	2,800	-

[12] Guidelines for assessing human health risks from environmental hazards (enHealth, June 2012).

Analyte	HSL D, 0-1 m, Sand	HSL D, 1-2 m, Sand	HIL D
F2 (>C_{10} – C_{16} less naphthalene)	500	2,400	-
BTEXN			
Benzene	4	10	-
Toluene	4,800	16,000	-
Ethylbenzene	1,300	4,600	-
Total Xylenes	840	3,200	-
Naphthalene	3	15	-
VOCs [1]			
1,1,1-Trichloroethane	-	-	230
cis-1,2-Dichloroethene	-	-	0.3
Tetrachloroethene	-	-	8
Trichloroethene	-	-	0.08
Vinyl chloride	-	-	0.1

Notes:
All criteria in mg/m^3
- No criteria provided
NL: non-limiting
1: Interim soil vapour health investigation levels for volatile organic compounds are independent of soil type and depth. Application of interim HILs is based on a measurement of shallow (0-1m) soil vapour (or deeper where the values are to be applied to a future building with a basement) or sub-slab soil vapour.

9.6.2 Soil Vapour Criteria – Residential Land Use Scenario

As detailed in **Section 9.2** this assessment considers potential risk to receptors in a more sensitive land use such as residential. Table F2 details the soil vapour criteria applicable for the protection of human health for residential land use as described in the NEPM (NEPC 2013). A summary of the laboratory analytical results is provided in **Table 19**.

Table 19: Summary of Soil Vapour Screening Levels – Residential Land Use

Analyte	HSL A/B, 0-1 m, Sand	HSL A/B, 1-2 m, Sand	HIL B
TRH			
F1 (C_6-C_{10} less BTEX)	180	640	-
F2 (>C_{10} – C_{16} less naphthalene)	130	560	-
BTEXN			
Benzene	1	3	-
Toluene	1300	3800	-

Analyte	HSL A/B, 0-1 m, Sand	HSL A/B, 1-2 m, Sand	HIL B
Ethylbenzene	330	1100	-
Total Xylenes	220	750	-
Naphthalene	0.8	3	-
VOCs [1]			
1,1,1-Trichloroethane	-	-	60
cis-1,2-Dichloroethene	-	-	0.08
Tetrachloroethene	-	-	2
Trichloroethene	-	-	0.02
Vinyl chloride	-	-	0.03

Notes:
All criteria in mg/m^3
- No criteria provided
NL: non-limiting
1: Interim soil vapour health investigation levels for volatile organic compounds are independent of soil type and depth. Application of interim HILs is based on a measurement of shallow (0-1m) soil vapour (or deeper where the values are to be applied to a future building with a basement) or sub-slab soil vapour.

10.0 DATA QUALITY OBJECTIVES

The Data Quality Objectives (DQOs) process is used to define the type, quantity and quality of data needed to support decisions relating to the environmental condition of a site. The seven step DQO/data quality indicator (DQI) process is identified in Schedule B2 Guideline on Site Characterisation of the NEPM (NEPC 2013) as one example of a suitable systematic planning approach for site investigations.

The DQO process involves seven steps as follows:

- Step 1: State the problem;
- Step 2: Identify the decision or goal of the investigation;
- Step 3: Identify the information inputs;
- Step 4: Define the site boundaries;
- Step 5: Develop the analytical approach;
- Step 6: Specify performance or acceptance limits; and
- Step 7: Develop the plan for obtaining data.

The DQO process will be applied as described below, to ensure that data collection activities are appropriate and achieve the stated objectives.

10.1 Data Quality Objectives, Assurance and Quality Control

The DQO process is used to define the type, quantity and quality of data needed to support decisions relating to the environmental condition of a site. The seven step DQO/data quality indicator (DQI) planning approach provided in Section 5.2 of Schedule B2 of the NEPM (NEPC 2013) its application to the site assessment is outlined below.

10.1.1 State the Problem

A review of site historical information and a review of previously completed environmental related reports indicated that there is contamination present on some parts of the site exists in addition to the existence of offsite sources that have the potential to contaminate the soils and/or groundwater underlying the site.

The contamination assessment for the site was designed to identify areas within the site that are likely, based on the findings of the historical and site associated environmental information review, to have a higher potential to result in contamination of the subsurface. The contamination assessment was also designed to assess the nature and extent of potential contamination in these targeted areas and determine the need for remediation (if any) to facilitate the redevelopment of the site for the proposed end land use i.e. commercial and multi storey residential.

10.1.2 Identify the Decision or Goal of the Investigation

Assessment of the site focused on human health and environmental risks associated with identified and potential contamination. The decisions required included:

- Whether contamination exists in soil, soil vapour or groundwater at the site that would preclude the proposed future land use; and
- If such contamination is encountered through the characterisation process, assess feasible remediation/management options.

The site is considered to not pose a risk if analytical results, considered in the context of the site observations and field screening protocols, for the media sampled and analysed are less than the adopted site criteria presented in **Section 9.0**.

Where an unacceptable risk is indicated, feasible remediation and/or management options will need to be considered to address the risk and meet the project objective of allowing commercial land use at ground level (including retail, basements, parking and maintenance rooms) and multi storey residential use.

10.1.3 Identify the Information Inputs

For the investigations into the extent and nature of site contamination the major inputs are:

- Environmental guidance published and/or endorsed by the NSW EPA;
- Review of historical activities conducted at the site and identification of areas of concern and associated COPC;
- Assessment of the environmental setting of the site;
- Collection of representative samples of soil, soil vapour and groundwater for subsequent laboratory analysis of the samples at detection limits appropriate to the adopted site criteria (see **Section 9.0**);
- Visual and odour assessment of soil and groundwater are also completed during the investigation work. The contamination assessment will include field observations for anthropogenic materials, recording the presence or absence of hydrocarbon (or other chemical odours), staining of soils, and presence of Phase Separated Hydrocarbons (PSH);
- Assessment of the suitability of the data for the purposes of environmental assessment through application of DQIs (see below);
- Assessment of health and environmental risk based on analysis of soil, soil vapour and groundwater samples for COPC including TRH, BTEXN, PAH, asbestos, PFAS, OCPs, OPPs, PCBs and heavy metals, as well as the fate and transport of identified contaminants; and
- If further management/remediation is warranted, the response needs to be assessed as technically feasible, environmentally justifiable and consistent with relevant laws, policies and guidelines.

10.1.4 Define the Site Boundaries

The contamination investigation area (the site) comprises a total of 23 separate land parcels (refer **Table 1**) covering a total area of approximately 7,750 m^2 and a vertical extent of 3.0 m bgl targeting the immediate subsoils, deeper soil profile including soil vapour, and approximately 7.0 m bgl targeting the groundwater underlying the site.

The Site boundary for the purposes of this assessment is provided in **Figure 1**.

10.1.5 Develop the Analytical Approach

The purpose of this step is to define the parameters of interest, specify action levels and combine the outputs of the previous DQO steps to develop a series of options if certain trigger events occur. A decision on the acceptance of the analytical data will be made on the basis of the DQI.

The results of soil, soil vapour and groundwater analytical data will be compared with the adopted site criteria to allow the proposed commercial land use at ground level and subsurface structures (i.e. basements). Consideration will also be provided for more sensitive land uses i.e. high density residential. The criteria are based on the NEPC (2013) health investigation levels (HIL-D, HIL-B) and health screening levels (HSL-D, HSL-B) for commercial/industrial land use and high density residential land use.

The environmental investigation levels (EILs) and ecological screening levels (ESLs) for commercial/industrial and urban residential and public open space land use will be adopted for assessment of potential ecological impacts particularly given that there will be limited access to soils irrespective of the proposed land use.

When assessing soil analytical laboratory results, if the 95 % Upper Confidence Limit (UCL) of the mean concentrations for the contaminant of concern is less than the adopted criteria for land use purposes, the data set for that population will be considered to meet the guideline. However, individual concentrations are to be less than 250 % of the criteria and the standard deviation should be less than 50 % of the criteria. Statistical calculations will be performed, where necessary, on data sets relating to specific contamination sources or proposed end uses. Where exceedances of these conditions are identified in the data set, further investigation (including site specific risk assessments) will be triggered.

Water contaminant concentration in excess of the ANZG 2018 trigger values for marine water (generally 95%) or the ADWQ values for drinking water (NHMRC 2011) may indicate the need for further investigation of environmental risk, including fate and transport modelling. The presence of PSH may trigger the need to remediate the contamination to the extent practicable.

If asbestos fibres are not detected in any of the samples collected and no asbestos fragments are visually identified as remaining in the accessible portions of the site, the data set for that population will be considered to be acceptable. Where asbestos is identified, the management/remediation of the impacted area will be undertaken in general accordance with the NEPM (NEPC 2013), based on the *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in WA* (WA DoH 2009).

10.1.6 Specify Performance or Acceptance Limits

Data Quality Indicators were developed based on the following PARCC parameters including:

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

The measures/criteria employed to enable review of these parameters are described below.

Precision

Field precision will be promoted through adherence to technical procedures.

Suitable criteria and/or performance indicators for assessment of laboratory precision include performance of intra-laboratory and inter-laboratory duplicate sample sets through calculation of relative percentage differences (RPD).

Data validation summary sheets are presented in **Appendix J1**, where RPDs for intra- (duplicate) laboratory samples have been calculated and assessed.

Accuracy (Bias)

Accuracy in the field activities will be monitored through the use of technical procedures and ensuring that these are complied with throughout the sampling events. The closeness of the reported data to the “true” value is assessed through review of performance of:

- Method blanks, which are analysed for the analytes targeted in the primary samples;
- Matrix spike sample sets; and
- Laboratory control samples.

Representativeness

To ensure representativeness of the field data, appropriate media will be sampled as identified in the sampling plan (**Section 7.0**). To ensure the data produced by the laboratory is representative of conditions encountered in the field, the following steps will be taken:

- Blank samples (i.e. method, trip, rinsate) will be run at the laboratory in parallel with field samples to confirm there are no unacceptable instances of laboratory artefacts;
- Review of RPD values for field and laboratory duplicates to provide an indication that the samples are generally homogeneous, with no unacceptable instances of significant sample matrix heterogeneities:
- The appropriateness of collection methodologies, handling, storage and preservation techniques will be assessed to ensure/confirm there was minimal opportunity for sample interference or degradation (i.e. volatile loss during transport due to incorrect preservation/transport methods/sampling technique for example).

Completeness

In assessing the completeness of the field data the following is considered:

- Representative samples collected; and
- An appropriately experienced sampling team is engaged in the investigation program.
- In validating the degree of completeness of the analytical data sets acquired during the program the following is considered:
  - Whether procedures for sampling protocols have been adhered to; and
  - Copies of all project chain of custody (COC) documentation are reviewed and presented.

Comparability

Issues of comparability between data sets were reduced through adherence to the same SOPs on each data gathering activity and through collection of data by experienced samplers and NATA accredited laboratory methodologies will be employed in the selected laboratories.

10.1.7 Develop the Plan for Obtaining Data

Sample locations were generally selected based on the site history and review of the environmental associated reports. Further, sample locations were also dictated by construction activities on site and associated access constraints.

The preferred locations were generally implemented in the field, but modifications were introduced where additional information on site conditions came to light (i.e. obstructions) as well as visual and olfactory evidence of contamination.

In this regard the sampling design was subject to ongoing review to allow optimisation, where possible, of the collection of data pertinent to the assessment of contamination related to the identified former onsite and offsite activities and current site conditions.

11.0 INVESTIGATION METHODOLOGY

The soil, groundwater and soil vapour investigation, comprising sampling and analysis, was carried out by Golder-Douglas and its subcontractors at the site. The investigation was carried out in general accordance with the plan summarised in **Section 7.0**.

The works were undertaken in general accordance with Golder technical procedures and the following guidance:

- The NEPM (as amended 2013);
- Australian Standard 4482.2 – 1999, *Guide to the Sampling and Investigation of Potentially Contaminated Soil, Part 2: Volatile Substances*, 5 September (SA 1999); and
- Australian Standard 4482.1-2005: *Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil – Part 1: Non-volatile and Semi-volatile Compounds*, (SA 2005).

11.1 Field Work Supervision

Golder-Douglas environmental scientists supervised the site investigation works, logged the subsurface conditions and collected soil, groundwater and soil vapour samples across the site. A total of 19 soil bores were drilled on the site, with four groundwater monitoring wells and six soil vapour probes installed.

Fieldworks were completed in accordance with Golder Associates' Standard Operating Protocols. Copies of field records are presented in **Appendix D**.

11.2 Soil Investigation Works

The soil investigation works were undertaken on 6, 7, 13, 14, 20, 27 and 28 October 2018, which comprised sampling from a combination of hand augering and direct push or standard penetration test (SPT) drilling methods. The sampling was performed using a Geoprobe 7822 push tube drill rig provided by Matrix Drilling Pty Ltd, Dando drill rig provided by BG Drilling Pty Ltd and a Commachio drill rig provided by Ground Test. Investigation locations are shown on **Figure 2**.

Soil samples were field head space screened for the presence of detectable VOCs with a field portable photo-ionization detector (PID). Soil samples were also inspected and ranked for the presence of visual or olfactory evidence of contamination. The ranking system used is outlined in **Table 20** below.

Table 20: Soil Contamination Ranking System

Visible Contamination		Odorous Soil	
Rank	**Description**	**Rank**	**Description**
0	No visible evidence of contamination	A	Natural odour only
1	Slight evidence of visual contamination (trace)	B	Slight odour
2	Visible contamination (e.g. more than trace)	C	Moderate odour
3	Obviously contaminated (e.g. predominantly tar, slag, spent oxide, coke)	D	Strong odour

The soils encountered during drilling were logged according to the Unified Soil Classification System (USCS). A description of the soils encountered is presented on the bore logs presented in **Appendix E**, and observations of indicators of potential contamination are presented in **Section 12.1.2**.

The soil bores were advanced to a minimum of 3.2 m bgl apart from hand auger location SRT-BH414 which was terminated at 0.5 m bgl due to refusal on bricks. It is noted that SRT-BH414 was not able to be advanced using a drill rig due to proximity to the church. The following is also noted that:

- SRT-BH413 was initially located near the north-east corner of the church, however a secondary slab was identified at 0.3 m bgl. SRT-BH413 was subsequently relocated to the centre of the spoil area where a drill rig could be used. The repositioned bore is identified as SRT-BH413A on **Figure 2**; and
- Refusal was encountered at 1.2 m bgl at SRT-BH419A on a concrete slab. The location was subsequently moved approximately 5 m to the north and re-drilled as SRT-BH419.

During drilling, soil sampling was generally conducted at depths of 0.0 to 0.2 m bgl, 0.5 m bgl, 1.0 m bgl, 1.5 m bgl and every metre thereafter within the soil profile. A limited number of samples were collected outside of the nominated sampling depths e.g. directly beneath varying depths of hard standing, changes in stratigraphy or where observations of potential contamination were identified.

Soil bores which did not have groundwater monitoring wells or soil vapour probes installed were backfilled to the surface with drill cuttings upon completion of sampling.

11.3 Groundwater Investigation

11.3.1 Monitoring Bore Installation Rationale

Four soil sampling locations (SRT-BH409, SRT-BH419, SRT-BH420 and SRT-BH426) were converted to groundwater monitoring wells to assess general groundwater quality at the site. The locations of the groundwater monitoring wells are shown on **Figure 2**.

11.3.2 Monitoring Bore Construction

The boreholes were drilled and groundwater monitoring wells were installed by Matrix Drilling Pty Ltd and BG Drilling Pty Ltd on 7 October (SRT-BH426), 20 October (SRT-BH419), 27 October (SRT-BH409) and 28 October (SRT-BH420). Throughout the drilling program, an environmental scientist from Golder-Douglas logged the sub-surface conditions. Groundwater monitoring wells were installed in general accordance the guidance provided in the *Minimum Construction Requirements for Water Bores in Australia* (NUDLC 2012) as described below.

The monitoring bores were intended to be screened across the groundwater table. The standpipes in each monitoring bore were constructed using 50 mm diameter Class 18 PVC casing. The annulus between the screen and monitoring bore wall was backfilled with 2 mm graded sand, to a height of approximately 0.5 m above the top of the screened section for each monitoring well. A bentonite seal was then placed above the sand at a height of 1.0 m above the filter pack. The well annulus above the bentonite seals were then grouted and the wells completed with a steel ‘gatic’ cover, flush with the ground surface, installed over the top of each of the bores.

Borehole logs were prepared for each monitoring well location showing geology and well construction details. The well construction details are presented on the borehole reports in **Appendix E**.

As the investigations were performed to support SSI 15_7400 and they were less than 40 m in depth, the wells were not required to be licenced by Department of Primary Industries (DPI) Water.

Following installation, Golder-Douglas used differential global positioning system (GPS) survey equipment to locate the monitoring locations and measure the elevation of the ground level and top of well casing to m AHD. Details of the well levels are presented in **Table 21** below.

Table 21: Groundwater Well Installation Information

Location	Ground Level (m AHD)	Well Collar Level (m AHD)	Well Depth (m)	Screen Interval (m bgl)
SRT-BH409	15.456	15.386	5.5	2.5 – 5.5
SRT-BH419	16.123	16.028	6.5	3.5 – 6.5
SRT-BH420	16.322	16.21	5.8	2.8 – 5.8
SRT-BH426	16.584	16.496	6.0	3.0 – 6.0
SRT-GMW1A [1]	15.563	15.908	6.5	2.0 – 6.5
SRT-GMW2A [1]	15.178	16.098	6.0	2.0 – 6.0

Notes:

1. Existing groundwater well

11.3.3 Groundwater Sampling

On completion of installation, each groundwater well was developed to remove silt/fines potentially introduced during drilling and for alignment of the gravel pack surrounding the well screens. The two existing wells were also re-developed during the ESA. The newly installed and existing wells were developed using a Waterra Power Pack PP1 and dedicated Waterra polyethylene tubing. Between 5 and 60 litres of water were removed from the groundwater wells during well development and records are presented in **Appendix F**.

Sampling of the six groundwater monitoring wells was undertaken on 28 October, 1 November and 2 November 2018 using low flow sampling techniques.

Prior to sampling the standing water level (SWL) was gauged using an electronic interface probe. A peristaltic pump, with dedicated tubing for each well, was used to purge and sample each groundwater monitoring well.

The field parameter results were obtained at the time of sampling and these are presented in **Appendix F**. No free phase hydrocarbons or odours were observed in the wells sampled.

11.4 Soil Vapour Investigation

11.4.1 Soil Vapour Well Installation

Soil vapour monitoring well installation works were undertaken on 6, 7 and 20 October 2018. Locations of the monitoring wells are presented on **Figure 2**. Details of soil vapour monitoring methodologies are summarised in the following sub-sections.

The installation of the soil vapour wells was undertaken in general accordance with *Technical Report No. 13 – Field Assessment of Vapours* (CRC 2009). Six of the soil sampling bores were converted to soil vapour wells, SRT-BH408, BH415, BH416, BH417, BH421 and BH422. These soil bores were advanced to 1.5 m bgl using a hand auger followed by push tube methods to varying targets dependent on subsurface conditions and location on the site. Groundwater at the site was observed to be relatively shallow with soil profile ‘collapse’ in the bores occurring at approximately 3.0 m bgl at some locations. The soil vapour wells were installed at depths to avoid groundwater ingress.

Soil vapour implants were installed for the purpose of sampling soil vapour. Soil samples were also collected from each location at various depths and these were scheduled for a similar suite of analysis as the soil vapour samples.

The implant anchor and 150 mm permanent stainless steel soil vapour implant screen (0.145 mm pore diameter), connected to 5 mm internal diameter Teflon® tubing, were placed at the base of the borehole and 0.39 to 0.42 m of graded (2 mm) sand was placed around the implant screen. The vapour wells were sealed to the surface using bentonite and grout with a gatic well cover installed flush with the surface level over each sampling location to prevent damage occurring to the sampling line and to ensure the area was safe for work after installation and sampling.

Bore logs showing the soil vapour well construction details are in **Appendix E.**

11.4.2 Soil Vapour Sampling

One soil vapour sampling event was completed on 21 October 2018.

It is typically recommended that soil vapour samples are collected after 5 - 7 days of dry weather to minimise the potential impact of elevated soil moisture on vapour migration. **Table 22** below summarises the weather for Sydney Airport (Weather Station 066037), the closest weather station to the Project site, throughout the week preceding and during the soil vapour sampling.

Table 22: Weather Observations – 14 October to 21 October 2018

Date	Rainfall (mm)	Maximum Temperature (oC)
14 October 2018	9.4	21.7
15 October 2018	5.2	22.6
16 October 2018	6.4	24.7
17 October 2018	0.6	25.1
18 October 2018	8.6	25.5
19 October 2018	7.2	28.7
20 October 2018	0	29.4
21 October 2018	21.0	18.9

Source: Bureau of Meteorology, 2018

The weather immediately prior to and during soil vapour sampling was wet with the only dry day being the day before the soil vapour sampling event, Saturday 20 October 2018. Given the investigation schedule and the assessment program constraints, the soil vapour sampling during a wet period was unavoidable. However, it is considered that given the subsurface soil profile in which the soil vapour wells were installed (sand) it was considered that the potential impact from the wet weather was not significant as the soils would have drained freely. In addition, the presence of continuous hardstand across the site would have minimised the infiltration of rainfall.

11.4.2.1 Soil Vapour Well Integrity Testing

Prior to sampling, the integrity of the soil vapour monitoring wells was tested in general accordance with the Interstate Technology & Regulatory Council (ITRC) (2007) *Vapour Intrusion Pathway: A Practical Guideline* and the New York State Department of Health (2006) *Guidance for Evaluating Soil Vapour Intrusion in the State of New York*.

After an initial vacuum check using a vacuum hand pump, helium leak testing was performed using ultra high purity helium tracer gas to determine if ambient air would enter the sampling train (which can dilute the primary sample and lead to an underestimation of soil vapour chemical concentrations). Helium was pumped into the shroud and the concentration measured using a helium monitor. The helium concentration was also

measured in the sample line. The concentration of helium in the sample line must be less than 10% of the concentration in the shroud to be considered acceptable. The results of the pre-sampling well integrity tests are presented in **Table 23**.

The sampling train was then purged and pre-sample screening was undertaken (using a landfill gas analyser and PID). Helium was pumped into the shroud for the duration of purging and sampling, and the sample collected was analysed for gases including helium, oxygen and carbon dioxide.

Table 23: Results of Soil Vapour Well Integrity (Helium Leak) Testing

Details	BH408	BH415	BH416	BH417	BH421	BH422
Helium concentration in shroud	64%	67.8%	56.9%	58.9%	34%	63.1%
Helium concentration in sample port	0%	0%	0%	0%	0%	0%
Interpretation	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable

11.4.2.2 Soil Vapour - Pre- and Post-Sample Screening

Prior to, and after soil vapour sampling, the concentration of total VOCs was measured using a PID and oxygen, carbon dioxide and methane, measured using a landfill gas meter at the soil vapour sampling locations. Results from the field screening are summarised in **Table 24** below.

Table 24: Field Screening Results Prior To and After Soil Vapour Sampling

Location	Screening Phase	PID Readings	Gas Analyser Readings		
		VOC (ppm)	Methane (%)	Carbon Dioxide (%)	Oxygen (%)
BH408	Pre-sampling	0.5	0.0	0.8	17.4
	Post-sampling	0.0	0.0	0.8	17.4
BH415	Pre-sampling	0.0	0.0	2.3	11.9
	Post-sampling	0.0	0.0	2.3	12.0
BH416	Pre-sampling	0.0	0.0	1.3	11.0
	Post-sampling	0.0	0.0	1.3	11.0
BH417	Pre-sampling	0.0	0.0	1.4	12.2
	Post-sampling	0.0	0.0	1.4	12.3
BH421	Pre-sampling	0.0	0.0	0.8	15.0
	Post-sampling	0.0	0.0	0.8	15.0
BH422	Pre-sampling	0.0	0.0	0.9	14.6
	Post-sampling	0.0	0.0	0.9	14.6

The field screening indicates that conditions prior to and after sampling are comparable for soil vapour sample locations. These results combined with the helium leak detection indicate it is unlikely that ambient air was drawn into the sampling train during soil vapour sampling.

11.4.2.3 Soil Vapour Well Purging

Each of the sampled soil vapour wells was purged (3 x calculated bore sample line and sample train) prior to sampling to ensure that a sample representative of the soil vapour at the sampling location was collected. The wells were purged by means of a low flow sample pump that was set to a maximum flow rate of 216 mL per minute. Purge volume, flow rate and duration were recorded on the soil vapour sample record forms presented in **Appendix G**.

11.4.2.4 Soil Vapour Sample Collection

Vapour samples were collected using individually certified Summa® canisters at the soil vapour sampling locations. Summa® canisters are evacuated stainless steel chambers that provide a non-intrusive, active sampling method to collect a bulk soil gas sample over a specified time period. The canisters were 3.2 L in volume and fitted with a 30 minute regulator. The regulators allowed the soil vapour to be sampled at a relatively constant rate over the selected sampling period.

The use of Summa® canisters allows appropriate analytical methods to be used that provide accurate determination of a large range of low level VOCs in air. The Summa® canisters were certified 100% clean by the analysing laboratories ALS, Newcastle (primary laboratory) and Envirolab, Chatswood (secondary laboratory) and used within appropriate holding times. The pressure change in the canisters was noted at regular times during sampling and the pressure was observed to drop at a constant rate.

The majority of the soil vapour wells were sampled a minimum of five days after installation of the soil vapour wells. SRT-BH415 was sampled approximately 30 hours after installation of the soil vapour well. This is considered an appropriate time between installation and sampling, given that CRC CARE (CRC 2009) recommends a minimum of 24 to 48 hours between installation and sampling.

The intra-laboratory duplicate sample (QC100) and inter-laboratory triplicate sample (QC200) was collected concurrently with the primary samples using a certified clean T connector supplied by the laboratory.

11.4.2.5 Soil Vapour Sample Dispatch and Receipt

The vacuum pressure for each canister prior to sampling, after sample collection and upon receipt at the laboratory has been summarised in **Table 25** below. A vacuum pressure after sampling of between 5 and 10 inches of mercury (“Hg) is considered to be representative of constant controlled flow sampling rate and collection of a complete sample. A vacuum pressure difference of less than 5 “Hg between sample dispatch (after sample collection) and sample receipt is deemed acceptable.

Table 25: Summary of Summa Canister Vacuum Readings

Sample ID	Vacuum prior to sampling (“Hg)	Vacuum post to sampling (“Hg)
BH409	-30	-6
BH415	-30	-6
BH416	-30	-9
BH417	-30	-8
BH421	-30	-5
BH422	-30	-5
QC100	-30	-8
QC200	-30	-6

11.4.2.6 Soil Vapour Sample Analysis

Soil vapour samples collected were sent under chain of custody to the laboratory for analysis. Samples were analysed using a modified TO-15 method and a modified TO-12 method equivalent that is capable of detecting total non-methane organic carbon (TNMOC) concentrations.

Soil vapour samples were analysed for:

- BTEXN;
- VOCs;
- TRH to C_{16}; and

- Permanent gases (oxygen, carbon dioxide and helium).

11.5 QA/QC Plan

11.5.1 Field Quality Control Samples

Field QA/QC sampling procedures implemented for the project included the following:

- Field duplicates: Both the primary samples and field duplicate samples generated in the field were sent to the primary laboratory, however the duplicate sample were blind coded. These were targeted for analysis at a frequency of 5 % or greater;
- Field triplicates: Individual samples were split in the field and placed in two separate containers. One sample was sent to the primary laboratory and the duplicate sent to an independent check laboratory. These were targeted for analysis at a frequency of 5 % or greater;
- Field spikes (trip spikes) and trip blanks were collected at a rate of one per laboratory batch of samples when sampling materials potentially contained volatiles;
- One soil vapour field duplicate sample and one field triplicate were collected and analysed; and
- Wash blanks/rinsate blanks were collected at a rate of one per day when non-disposable sampling equipment was used. The rate of laboratory analysis was one per day.

11.5.2 Field Quality Control

Standard QA/QC procedures were adopted during the investigation, including those for sample collection, management and handling. Specific requirements included the use of laboratory prepared jars and containers, decontamination of sampling equipment between locations, collection of an appropriate number of quality control samples, preservation of samples in ice chests and transport to laboratories under chain of custody (CoC) documentation.

Decontamination protocols consistent with the methods recommended by the Australian Standard, AS 4482.1-2005 (SA 2005), were to be used throughout the soil sampling program to reduce the risk of cross contamination between samples and sample locations. Relevant sampling equipment were decontaminated between samples and sample locations using a phosphate free detergent and a final rinse with deionised water. Decontamination wash and rinse water was collected in small disposable drums from where it was transferred off-site and temporarily held in an intermediate bulk container (IBC) at the Golder office prior to disposal, see **Section 11.7**.

11.5.3 Sample Labelling

The sample labels included sample identification numbers, date of collection, sampler initials and project number. Each sample was labelled with a unique sample identification number to facilitate tracking and cross referencing of sample information. QA/QC samples were also numbered with a unique sample number.

11.5.4 Chain of Custody Records

CoC records were used to track samples from the time of collection to the arrival of samples at the laboratory. Each sample container being shipped to the laboratory contained a CoC form. The laboratory maintains one copy of CoCs for its records. The scanned original was returned to Golder-Douglas acknowledging receipt of samples. Copies of the CoC records are presented in **Appendix I** along with the laboratory analytical certificates.

11.5.5 Sample Containers and Handling

Samples were placed in appropriate laboratory-supplied sample containers, filled to reduce headspace, labelled and properly sealed and transferred to an ice cooler for transport to the contract laboratory. Samples were cushioned within the ice chests by the use of bubble pack wrapping and were kept cool by the use of ice.

11.6 Laboratory Analysis

11.6.1 Soil Analytical Schedule

Based on the proposed sampling and analytical schedule presented in **Section 7.2** and visual observation recorded during fieldworks (i.e. staining, odours or changes in geology) as well as PID readings, up to three soil samples were selected from each sample location for laboratory analysis of the PCoC identified for the site. Copies of the certificates of analysis are presented in **Appendix I**.

The PCoCs analysed as part of this investigation were as follows:

- TRH / total petroleum hydrocarbons (TPH);
- BTEXN;
- PAHs;
- Heavy metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn)[13];
- OCPs and OPPs;
- PCBs;
- Asbestos;
- VOCs;
- Suspended Peroxide Oxidation Combined Activity and Sulfur (SPOCAS);
- Clay content, cation exchange capacity (CEC) and pH;
- Phenolics – total; and
- PFAS substances;

The soil samples were scheduled for a selection of the PCoCs listed above. In addition to the analytical suite detailed above, soil samples which had exceeded the waste classification screening levels were reviewed and selected samples scheduled for Toxicity Characteristic Leaching Procedure (TCLP) testing. The TCLP testing focused on heavy metals (mercury and lead) and benzo(a)pyrene (BaP).

11.6.2 Groundwater Analytical Schedule

Groundwater samples collected during the investigation were analysed for the pre-determined suite detailed below;

- TRH;
- BTEXN;
- PAHs;

[13] As – arsenic, Cd – cadmium, Cr – chromium, Cu – copper, Hg – mercury, Ni – nickel, Pb – lead, Zn - zinc

- Heavy metals (dissolved) (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn);
- OCPs and OPPs;
- PCBs;
- VOCs;
- Phenols – total;
- PFAS substances; and
- Total nitrogen, total phosphorus, reactive phosphorus; and
- Calcium, magnesium, sodium, potassium, chloride, sulfate, alkalinity and fluoride.

11.6.3 Laboratory Quality Control

Laboratory analysis was conducted in accordance with the standard test methods outlined in Schedule B(3) of the NEPM (NEPC 2013), US EPA, American Public Health Association (APHA) or equivalent modified methods supported by adequate quality control.

Golder-Douglas contracted laboratories that are National Association of Testing Authorities, Australia (NATA) accredited, however it is noted that accreditation is not held for some specific analytes. As part of Golder's internal quality control, the analytical laboratories used are audited and internal quality control procedures reviewed periodically.

The laboratories contracted by Golder-Douglas for this investigation were:

- ALS Laboratory Group (ALS), located in Smithfield and Newcastle, NSW, for primary soil and water samples and intra laboratory duplicate samples; and
- Envirolab Services (ELS), located in Chatswood, NSW, for inter-laboratory duplicate samples.

The laboratory certificates, including chain of custody documentation, are presented in **Appendix I**.

11.6.4 Data Validation

Following completion of the field programs, all of the information collected was checked, collated, and summarised in tabular form. The results of the laboratory analyses have been assessed and validated progressively using recognised QA procedures.

The primary objective of the data validation process has been to ensure that the data reported can be used to achieve the project objectives.

The validity of the analytical data reported has been assessed by a critical review of the QC check sample results. The validation process is based upon the following data validation guidance documents:

- National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC 2013);
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Data Review (US EPA 2010); and
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (US EPA 2008).

Accuracy and precision measurements from the appropriate QC check samples have been compared with the analytical DQOs to assess the quality of the analytical data. Data validation records are presented in **Appendix J1**.

11.7 Waste Management

Waste materials and excess spoil generated by the investigations and proposed for off-site disposal were placed into a 200 litre drum for temporary storage and assessed and classified in accordance with the *Waste Classification Guidelines Part 1: Classifying waste* (EPA 2014a). A waste classification letter was prepared for the excess drilling spoil. The material was stored in a secure location on-site pending off-site disposal, and was collected for off-site disposal on 1 November 2018. A copy of the waste classification report and waste disposal dockets are provided in **Appendix K**.

Groundwater well purge water was temporarily stored in small disposable drums from where it was transferred to an IBC stored at the Golder office. The IBC contents are periodically collected and disposed by Cleanaway as classification N205 Contaminated Groundwater.

12.0 INVESTIGATION RESULTS

12.1 Field Observations

12.1.1 Subsurface Ground Conditions

Borehole logs recorded during the field investigations are presented in **Appendix E**. The borelogs contain a record of the underlying fill material (if present) and the geology encountered. A record of the soil samples collected, drill method used, results of the PID screening and observations made during the drilling are also recorded.

12.1.2 Observations of Potential Indicators of Contamination

A summary of field observations and observed potential indicators of contamination (where encountered), including field head space PID readings, is presented in **Table 26**. Anthropogenic inclusions were found in the fill material at the locations as noted below.

Table 26: Potential Indicators of Contamination and Fill Material

Location	Description (Visual, Olfactory or PID Reading)
SRT-BH408	Trace charcoal in fill material, 0.2 – 0.5 m bgl. PID readings ranged from 0.1 to 0.9 ppm.
SRT-BH409	Large fragments of concrete at 0.3 – 0.4 m bgl. PID readings ranged from 0.2 to 0.6 ppm.
SRT-BH410	Concrete layer between 0.4 and 0.79 m bgl. PID readings ranged from 0.5 to 1.0 ppm.
SRT_BH411	Trace charcoal in fill material, 0.15 – 0.3 m bgl. Large sandstone cobble at 0.3 m bgl. PID readings ranged from 0.2 to 1.3 ppm.
SRT-BH412	Large sandstone cobble in fill material between 0.1 and 0.3 m bgl. Trace brick fragments, 'blue metal' gravel, sandstone cobbles in fill material between 0.3 to 1.3 m bgl. PID readings ranged from 0.2 to 0.4 ppm.
SRT-BH413A	Fragments 'blue metal' gravel, sandstone cobbles, trace brick fragments in fill material between 0.24 to 0.5 m bgl. Fragments of glass and brick in fill material at 0.5 m bgl. PID readings ranged from 0.8 to 2 ppm.
SRT-BH414	Fragments of brick, tile, concrete and charcoal in fill material between 0.12 to 0.5 m bgl prior to refusal. PID readings ranged from 0.6 to 1 ppm.
SRT-BH415	Road base cobbles at 0.19 m bgl in fill material directly under concrete. PID readings ranged from 0.3 to 1 ppm.
SRT-BH416	Sandstone gravels between 0.25 and 0.9 m bgl in fill material. PID readings ranged from 0.4 to 0.8 ppm.
SRT-BH417	Road base at 0.22 m bgl, metal rod, fragments of tiles (ceramic and terracotta) and bricks at 0.45 – 0.52 m bgl. Concrete layer between 0.52 and 1.2 m bgl. PID readings ranged from 0.2 to 0.8 ppm.
SRT-BH418	Fragments of sandstone, bricks and concrete in fill material between 0.15 and 0.4 m bgl. Fragments of brick in fill material between 0.4 and 0.7 m bgl. PID readings ranged from less than detection limit to 1.5 ppm.
SRT-BH419	Concrete layer from ground surface to 1.05 m bgl. PID readings ranged from 0.2 to 0.5 ppm.

Location	Description (Visual, Olfactory or PID Reading)
SRT-BH419A	Fragments of brick, “blue metal” gravel, ceramic and metal, large fragment of concrete (0.2 x 0.2 m) in fill material between 0.35 to 1.2 m bgl. PID readings ranged between 0.8 to 6.1 ppm (0.25-0.35 m).
SRT-BH420	Fragments of igneous gravel, brick, concrete, sandstone and tiles in fill material between 0.35 and 1.35 m bgl.
SRT-BH421	Fill material between 0.23 and 0.6 m bgl. PID readings ranged from 0.2 to 0.7 ppm.
SRT-BH422	Fill material between 0.31 and 0.5 m bgl. PID readings ranged from 0.2 to 0.5 ppm.
SRT-BH423	Brick fragments in fill material between 0.36 and 1.0 m bgl. PID readings ranged from 0.5 and 2.1 ppm.
SRT-BH424	Trace sandstone, gravels and charcoal in fill material from 0.5 to 0.9 m bgl. Trace charcoal at 0.9 m bgl. PID readings ranged from less than detection limit to 0.8 ppm.
SRT-BH425	Fragments of tile, ceramic, concrete and bricks in fill material from 0.13 to 0.2 m bgl. Crushed sandstone and brick from 0.2 to 0.4 m bgl. Coal tar odour / chemical odour, ash in fill material between 0.4 m and 0.8 m bgl. PID readings ranged from 0.8 to 25.7 ppm (0.5 m bgl).
SRT-BH426	Terracotta tile fragments, brick, concrete, glass fragments, old bolts and nuts in fill material between 0.1 to 0.8 m bgl. Terracotta tile fragment noted at 1.5 m bgl (assumed to be associated with collapse from upper soil profile). PID readings ranged from 0.3 to 0.7 ppm.

12.1.3 Groundwater Field Parameters

Four groundwater monitoring wells were installed during the ESA in addition to the two groundwater which already existing at the site (installed by others). Groundwater levels and field parameters at the time of sampling are presented in **Appendix D**. Evidence of an oil sheen, NAPL or chemical odours were not observed during the well development or subsequent groundwater sampling event which occurred over the 28 October and 2 November 2018. The groundwater monitoring event was undertaken on two different days due to site and access constraints.

12.2 Analytical Results for Soil Investigation

12.2.1 Soil Analysis Results

Table A1 provides a summary of the laboratory analytical data with the recorded concentrations compared against selected investigation criteria. Laboratory certificates for these results are provided within **Appendix I**. A summary of the exceedances is provided in **Table 27**.

Table 27: Summary of Soil Exceedances (commercial/industrial land use scenario)

Bore	Depth (m)	Analyte	Concentration (mg/kg)	Criterion Exceeded †
SRT-BH414	0.4	Benzo(a)pyrene	5.9	ESL
SRT-BH416	0.25	Zinc	2100	EIL
SRT-BH419	1.05	Benzo(a)pyrene	2.5	ESL
SRT-BH420	0.5	Asbestos detected	Chrysotile**	HILs
		Zinc	804	EIL
SRT-BH420	1.0	Zinc	481	EIL

Bore	Depth (m)	Analyte	Concentration (mg/kg)	Criterion Exceeded †
SRT-BH423	0.5	Zinc	500	EIL
		Benzo(a)pyrene	2	ESL
SRT-BH425	0.15	Copper	128	EIL
		Zinc	566	EIL
		Benzo(a)pyrene	19	ESL
SRT-BH425	0.4	TRH C_{10}-C_{16}	2140	ML, ESL
		TRH C_{16}-C_{34}	23,600	ML, ESL
		TRH C_{34}-C_{40}	4620	ESL
		Copper	85	EIL
		Benzo(a)pyrene	320	ESL
		Benzo(a)pyrene TEQ	472	HIL
		Sum of PAHs	4920	HIL

Notes:

EIL/ESL – ecological investigation levels / ecological screening levels

HILs – health investigation levels

HSLs – health screening levels

MLs – management limits

† NEPC 2013 notes that ecological criteria apply to the top 2 m of soil at the finished ground level.

** One fragment of asbestos was detected in top 0.5m although the calculated percentage is lower than the commercial/industrial criterion detailed in Table 7 of NEPM (NEPC 2013).

12.2.2 Preliminary Soil Waste Classification Testing

Table B provide summaries of the laboratory analytical data with the concentrations compared against the NSW Waste Classification Guidelines (EPA 2014).

Please note that the preliminary waste classification exceedances reported in **Table 28** are for individual analytes per location. The overall waste classification will be defined by the uppermost exceedance recorded.

A summary of the preliminary waste classification is provided in **Table 28**.

Table 28: Summary of Preliminary Waste Classification

Bore	Depth (m)	Analyte	Concentration (mg/kg)	TCLP Concentration (mg/L)	Preliminary Waste Classification
SRT-BH414	0.4	Lead	976	5.6	RSW
SRT-BH416	0.25	Lead	813	6.8	RSW
SRT-BH416	0.5	Lead	276	-	RSW*
SRT-BH419	1.05	Benzo(a)pyrene	2.5	-	RSW **
SRT-BH420	0.5	Asbestos	Detected	-	Special Waste
		Lead	618	-	GSW †
SRT-BH421 / QCA102 / QCB102	0.5	Benzo(a)pyrene	0.8 – 1.0	-	RSW**
SRT-BH422	1.5	Benzo(a)pyrene	0.9		RSW**
SRT-BH423	0.5	Benzo(a)pyrene	2	<0.0005	GSW

Bore	Depth (m)	Analyte	Concentration (mg/kg)	TCLP Concentration (mg/L)	Preliminary Waste Classification
SRT-BH425	0.15	Benzo(a)pyrene	19	<0.0005	RSW
		Total PAHs	247	-	RSW
SRT-BH425	0.4 #	Benzo(a)pyrene	320	<0.0005	HW
		Total PAHs	4920	-	HW
		TRH C_{10}-C_{36} (Sum)	27,100	-	RSW
SRT-BH425	1.0	Benzo(a)pyrene	0.9	<0.0005	GSW
SRT-BH426	1.0	Benzo(a)pyrene	0.9	-	RSW**

Notes:

GSW – general solid waste, RSW – restricted solid waste, HW – hazardous waste

* Likely to be GSW based on leachable fraction of lead recorded at SRT-BH416 at 0.25 m

** TCLP testing not undertaken on benzo(a)pyrene but likely to be GSW based on TCLP results for other samples i.e. < LOR

† SRT-BH420 not analysed for TCLP lead, GSW based on TCLP lead results for SRT-BH420 1.0 m

SRT-BH425 0.4 m contains ash and is likely to be pre-classified as GSW under the *General Approval of the Immobilisation of Contaminants in Waste* (Immobilisation Approval 1999/05) for ash, ash-contaminated natural excavated materials or coal-contaminated natural excavated materials.

12.2.3 Acid Sulfate Soils

The results of the SPOCAS analysis are presented in **Table C** and corresponding laboratory certificates are provided in **Appendix I**. A summary of the exceedances encountered is provided below:

- SRT-BH420 at a depth pf 5.5 m bgl, concentrations of Net Acidity (sulfur) at 0.04 % sulfur and Net Acidity (acidity units) at 25 moles H+/tonne were recorded against criteria of 0.03 % sulfur and 18 moles H+/tonne respectively.

12.3 Analytical Results for Groundwater Investigation

A summary of key groundwater exceedances (nutrients, heavy metals and contaminants) is provided in **Table E** along with the value for the most conservative criterion it exceeded. A summary of the exceedances of the adopted groundwater criteria is provided in **Table 29**.

Table 29: Summary of Groundwater Exceedances

Groundwater Monitoring Well	Analyte	Concentration (µg/L unless otherwise stated)	Most Conservative Criterion Exceeded	
			Criterion Value (µg/L)	Criterion Exceeded
SRT-BH419	PFOS	0.02	0.00023	99% species protection, ANZG 2018*
	Zinc	48	15	Marine 95% ANZG 2018
SRT-BH420	Copper	3	1.3	Marine 95% ANZG 2018
	Zinc	16	15	Marine 95% ANZG 2018
SRT-BH426	PFHxS and PFOS (sum)	0.42	0.07^	NEMP 2018
	PFOS	0.4	0.00023	99% species protection, ANZG 2018*

Groundwater Monitoring Well	Analyte	Concentration (µg/L unless otherwise stated)	Most Conservative Criterion Exceeded	
			Criterion Value (µg/L)	Criterion Exceeded
	Copper	2	1.3	Marine 95% ANZG 2018
	Zinc	73	15	Marine 95% ANZG 2018
SRT-GMW1A	PFHxS and PFOS (sum)	0.48	0.07^	NEMP 2018
	PFOS	0.41	0.00023	99% species protection, ANZG 2018*
	Copper	4	1.3	Marine 95% ANZG 2018
	Lead	16	10	ADWG 2011
	Zinc	555	15	Marine 95% ANZG 2018
SRT-GMW2A / QCA200 / QCB200	PFHxS and PFOS (sum)	0.12	0.07^	NEMP 2018
	PFOS	0.04 – 0.09	0.00023	99% species protection, ANZG 2018*
	Zinc	58 – 60	15	Marine 95% ANZG 2018

Notes:

*PFAS National Environmental Management Plan (NEMP), (HEPA, Jan 2018), 99% species protection applied for compounds with bioaccumulating nature.

^ NEMP 2018, drinking water guideline (health based guidance values as per **Table 1**).

ADWG 2011: Australian Drinking Water Guidelines 2011.

Marine 95% ANZG 2018: Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Australia and New Zealand Government 2018.

12.4 Soil Vapour Analytical Results

The only exceedance of the adopted soil vapour assessment criteria in a commercial/industrial land use scenario was at SRT-BH416 with a concentration of tetrachloroethene recorded at 8.4 mg/m^3 (at a depth of 2.0 m bgl). This concentration exceeded the commercial/industrial criterion for the protection of human health of 8 mg/m^3 for soils between 0 to 1.0 m bgl.

The summary analytical data is presented in **Table F1**.

12.5 Residential Land Use Scenario

Table A2 provides a summary of the laboratory analytical data with the recorded concentrations compared against selected investigation criteria. Laboratory certificates for these results are provided within **Appendix I**. A summary of the exceedances is provided in **Table 30**.

Table 30: Summary of Soil Exceedances (Residential 'B' Land Use Scenario)

Bore	Depth (m)	Analyte	Concentration (mg/kg)	Criterion Exceeded †
SRT-BH412	0.5	Benzo(a)pyrene	1.2	ESL
SRT-BH413A	0.5	Copper	72	EIL
SRT-BH414	0.4	BaP TEQ	8.8	HIL
		TRH C_{16}-C_{34}	430	ESL
		Benzo(a)pyrene	5.9	ESL

Bore	Depth (m)	Analyte	Concentration (mg/kg)	Criterion Exceeded †
		Benzo(a)pyrene TEQ	8.8	HIL
SRT-BH416	0.25	Zinc	2100	EIL
SRT-BH416	0.5	Benzo(a)pyrene	0.8	ESL
SRT-BH418	0.2	Copper	63	EIL
SRT-BH419	1.05	Benzo(a)pyrene	2.5	ESL
SRT-BH420	0.5	Asbestos detected	Chrysotile**	HILs
		Zinc	804	EIL
		Copper	76	EIL
SRT-BH420	1.0	Zinc	481	EIL
		Copper	78	EIL
SRT-BH421 (QCA102 / QCB102)	0.5	Benzo(a)pyrene	1	ESL
SRT-BH422	0.5	Benzo(a)pyrene	1.4	ESL
SRT-BH422	1.5	Benzo(a)pyrene	0.9	ESL
SRT-BH423	0.5	Zinc	500	EIL
		Benzo(a)pyrene	2	ESL
SRT-BH425	0.15	Copper	128	EIL
		Zinc	566	EIL
		Benzo(a)pyrene	19	ESL
		Benzo(a)pyrene TEQ	27.8	HIL
		TRH C_{16}-C_{34}	1,070	ML
SRT-BH425	0.4	TRH C_{10}-C16	2,140	ML, ESL
		TRH C_{10}-C_{16} minus naphthalene	2,090	HSL
		TRH C_{16}-C_{34}	23,600	HIL, ML, ESL
		TRH C_{34}-C_{40}	4620	ESL
		Copper	85	EIL
		Benzo(a)pyrene	320	ESL
		Benzo(a)pyrene TEQ	472	HIL
		Benzene	1.8	HSL
		Naphthalene	49 & 111	HSL
		Sum of PAHs	4920	HIL
SRT-BH425	1.0	Benzo(a)pyrene	0.9	ESL
SRT-BH426	1.0	Benzo(a)pyrene	0.9	ESL

Notes:

EIL/ESL – ecological investigation levels / ecological screening levels

HILs – health investigation levels

HSLs – health screening levels

MLs – management limits

† NEPC 2013 notes that ecological criteria apply to the top 2 m of soil at the finished ground level.

** One fragment of asbestos was detected in top 0.5m although the calculated percentage is lower than the commercial/industrial criterion detailed in Table 7 of NEPM (NEPC 2013).

12.6 Quality Assurance / Quality Control

An assessment of the project quality assurance program for the site investigation works has been performed and is presented in the Data validation sheets for each laboratory batch (**Appendix J1**).

An assessment of the quality assurance program for the site investigation works has been performed and is presented in **Appendix J2**.

13.0 REVISED CONCEPTUAL SITE MODEL

The Revised CSM for the site was developed based on the preliminary CSM and a review of the outcomes of the ESA.

The outcomes of the ESA indicate that there is some contamination at the site however it does not appear to be widespread.

The site is covered in a continuous layer of concrete hardstand and it is considered that there is a low risk to ecological receptors under the current configuration. In addition, based on the conceptual designs for the redevelopment of the site the future risk to ecological receptors is also considered low.

If the site were to be redeveloped for a more sensitive land use which included exposed soils the risks to onsite ecological receptors may increase. But this risk would only be realized if excavation of shallow soils was not undertaken and all soils remained on site. As such, the revised CSM has considered ecological receptors where necessary.

The risks to human health have mainly been assessed on the direct contact pathway for current and future site users with constructions workers likely to have the greatest risk of contact. Vapour inhalation risks are considered low for a commercial/industrial land use setting however this risk increases if a more sensitive land use occupies the site. If excavations are planned, further assessment in the vicinity of the former dry cleaners and former printers is recommended as there may be a risk of deeper impacted soils and/or residual contamination which can act as a secondary source of both groundwater and soil vapour contamination. It is noted though that concentrations of COPCs in groundwater are low across the site with the exception of PFAS.

Offsite risks are also considered low on the basis of the outcomes of the ESA as concentrations of COPCs are generally low at the hydraulically downgradient well. In addition, the hydraulically upgradient well recorded concentrations of COPCs which were low.

The ‘further action / management recommended column’ is not routinely included in a CSM however it has been added to provide information in relation to potential future action that may be required at the site on the basis of the outcomes of the ESA.

Table 31: Revised Conceptual Site Model

Land Use / Activity	Source	Pathway	Potential Receptor	Nature of Potential Issue / Assessed Risk	Further Action / Management Recommended
ONSITE					
Former Service Station (northern block)	Potential for leakage/ spillage from USTs and associated infrastructure.	Migration of contaminants into underlying soil profile	Current site users Maintenance workers Future site users Onsite ecological receptors	Based on the results of the ESA it is considered unlikely that there is extensive contamination associated with the former service station as concentrations of COPCs in groundwater at hydraulically downgradient wells are low. There may be residual soil contamination in the vicinity of the former service station site. Risks to groundwater based receptors from this potential source are considered low.	Data gaps exist in relation to the potential presence of USTs within the footprint of former service station. If localised soil impact, groundwater impact or USTs are encountered during construction they can be removed at that time however construction timeframes are likely to be impacted.
		Migration of contaminants into groundwater underlying the site	Current site users Maintenance workers Future site users Onsite and offsite ecological receptors Offsite groundwater users		
		Vapour intrusion from volatile contaminants	Current site users Maintenance workers Future site users Off-site receptors (e.g. transport infrastructure)	Results of the soil vapour assessment indicate low concentrations of COPCs. Elevated concentrations of PCE greater than the commercial/ industrial criterion were present in one soil vapour well (SRT-BH416) to the south east however it is considered likely that it is associated with other former sources at the site.	Additional soil vapour and groundwater sampling is recommended to further understand the source-pathway-receptor linkage.

Land Use / Activity	Source	Pathway	Potential Receptor	Nature of Potential Issue / Assessed Risk	Further Action / Management Recommended
Former dry cleaner (northern block)	Storage and use of chlorinated solvents associated with dry cleaning activities.	Migration of contaminants into underlying soil profile	Current site users Maintenance workers Future site users Onsite ecological receptors	Based on results of the ESA, concentrations of target COPCs in soil were below the LORs and the risks to receptors are considered low. A previous environmental assessment (DP 2018) indicated the presence of PCE at depth in the vicinity of the dry cleaners. A soil sample was obtained at 3.0 m at SRT-BH416 and concentrations of target COPCs were below the respective LORs.	If subsurface structures are planned in this area further assessment may be required to assess the potential risk from deeper contamination i.e. greater than 3.0 m depth.

Land Use / Activity	Source	Pathway	Potential Receptor	Nature of Potential Issue / Assessed Risk	Further Action / Management Recommended
		Migration of contaminants into groundwater underlying the site	Current site users Maintenance workers Future site users Onsite and offsite ecological receptors Offsite groundwater users	The majority of concentrations of VOCs in groundwater were below the LORs with detections of chloroform and PCE. Based on the results of the ESA it is considered unlikely that there is extensive contamination associated with the former dry cleaners as concentrations of COPCs in groundwater at hydraulically downgradient wells are low. Risks to groundwater based receptors from this potential source are considered low.	No further action recommended.
		Vapour intrusion from volatile contaminants	Current site users Maintenance workers Future site users	Results of soil vapour assessment indicate concentrations of PCE greater than the commercial/industrial criteria present in one soil vapour well (SRT-BH416).	Additional soil vapour and groundwater sampling is recommended to further understand the source-pathway-receptor linkage

Land Use / Activity	Source	Pathway	Potential Receptor	Nature of Potential Issue / Assessed Risk	Further Action / Management Recommended
Former vehicle maintenance (northern block)	Potential for leakage/spillage from servicing vehicles. Potential for waste oil storage.	Migration of contaminants into underlying soil profile	Current site users Maintenance workers Future site users Onsite ecological receptors	Low concentrations of TRHs and PAHs were recorded in this vicinity which are lower than the human health assessment criteria. There were no exceedances of the ecological criteria for COPCs and risks are considered low.	No further action recommended.
		Migration of contaminants into groundwater underlying the site	Current site users Maintenance workers Future site users Onsite and offsite ecological receptors Offsite groundwater users	Elevated concentrations of PFAS were recorded in SRT-BH426 however this is considered representative of a wider groundwater issue as it is hydraulically upgradient and not associated with activities on site. Concentrations of TRHs, PAHs and VOCs are below the LORs in groundwater wells hydraulically downgradient (SRT-BH419 and SRT-BH420). Risks to groundwater based receptors from this potential source are considered low.	No further action recommended.

Land Use / Activity	Source	Pathway	Potential Receptor	Nature of Potential Issue / Assessed Risk	Further Action / Management Recommended
		Vapour intrusion from volatile contaminants	Current site users Maintenance workers Future site users	Concentrations of TRHs and VOCs were lower than the LORs. Risk from this potential source are considered low based on analytical results of COPCs in SRT-BH421 and SRT-BH422.	No further action recommended.
Former vehicle maintenance (southern block)	Potential for leakage/spillage from servicing vehicles. Potential for leakages/spillages from waste oil storage.	Migration of contaminants into underlying soil profile	Current site users Maintenance workers Future site users Onsite ecological receptors	The majority of concentrations of TRHs are below the LORs. Low concentrations of COPCs were noted at two locations in the vicinity of this potential source. Risks are considered low from this potential source.	No further action recommended.
		Migration of contaminants into groundwater underlying the site	Current site users Maintenance workers Future site users Onsite and offsite ecological receptors Offsite groundwater users	The risks to groundwater based receptors from this potential source are considered low as concentrations of TRHs and VOCs were below the LORs in SRT-BH409. In addition, this is the most downgradient well at the site and indicates that offsite migration of contamination is unlikely to be occurring.	No further action recommended.

Land Use / Activity	Source	Pathway	Potential Receptor	Nature of Potential Issue / Assessed Risk	Further Action / Management Recommended
		Vapour intrusion from volatile contaminants	Current site users Maintenance workers Future site users	Minor concentrations of VOCs were reported; however, these are lower than the adopted assessment criteria. The risks from soil vapour in the vicinity of the potential source are considered low.	No further action recommended.
Former Printers (northern block)	Potential for leakage/spillage from storage and use of inks and solvents associated with cleaning processes	Migration of contaminants into underlying soil profile	Current site users Maintenance workers Future site users Onsite ecological receptors	Based on results of the ESA concentrations of target COPCs in soil were generally below the respective LORs with a low concentration of TRH >C_{16}-C_{34} (F3) recorded. The ongoing risks are considered low.	A previous environmental assessment (DP 2018) indicated the presence of PCE at depth in the vicinity of the dry cleaners and printers. Further assessment and waste classification may be required if excavations are planned in this area.

Land Use / Activity	Source	Pathway	Potential Receptor	Nature of Potential Issue / Assessed Risk	Further Action / Management Recommended
		Migration of contaminants into groundwater underlying the site	Current site users Maintenance workers Future site users Onsite and offsite ecological receptors Offsite groundwater users	The majority of concentrations of VOCs in groundwater were below the LORs with detections of chloroform and PCE. Based on the results of the ESA it is considered unlikely that there is extensive contamination associated with the former printers as concentrations of COPCs in groundwater at hydraulically downgradient wells are low.	No further action recommended.
		Vapour intrusion from volatile contaminants	Current site users Maintenance workers Future site users	The results of soil vapour analyses indicate concentrations of PCE greater than the commercial/industrial criteria present in one soil vapour well.	Additional soil vapour and groundwater sampling is recommended to further assess source-pathway-receptor linkage.

Land Use / Activity	Source	Pathway	Potential Receptor	Nature of Potential Issue / Assessed Risk	Further Action / Management Recommended
Imported fill (site wide) Site wide	Fill brought onto site from unknown sources. Potentially uncontrolled, may include waste materials.	Migration of contaminants into underlying soil profile	Current site users Maintenance workers Future site users Onsite ecological receptors	Fill material was observed across the site which included anthropogenic materials identified (i.e. ash). Localised contamination associated with the fill material was reported at the site. Numerous exceedances of adopted ecological criteria for heavy metals at the site were reported. ACM was detected in the fill material at one location and it is likely to be present elsewhere on the site as it was identified during this ESA and previous environmental assessments (EIA 2015a). Risks associated with imported fill, excluding asbestos for waste disposal costs, are generally considered to be low to moderate.	Remediation and/or management required for soils at SRT-BH426 and likely elsewhere on the site.

Land Use / Activity	Source	Pathway	Potential Receptor	Nature of Potential Issue / Assessed Risk	Further Action / Management Recommended
		Migration of contaminants into groundwater underlying the site	Current site users Maintenance workers Future site users Onsite and offsite ecological receptors Offsite groundwater users	Generally low concentrations of COPCs were reported in groundwater. It is considered unlikely that there is significant contamination derived from the fill material migrating into groundwater underlying the site.	No further action recommended.
Demolition of former buildings on site (site wide)	Demolition waste from former buildings potentially buried on site. ACM has been detected in fill material on site	Migration of contaminants into underlying soil profile	Current site users Maintenance workers Future site users Onsite ecological receptors	ACM was detected at one location in fill material and in other locations during previous environmental assessments (EIA 2015a). Contamination observed on site however did not appear to be widespread. It is likely that the contamination observed is associated with the fill materials which may be sourced from demolition materials as well as imported fill.	Management of soils at SRT-BH426 will be required. Possibly required at other areas if more sensitive land use is planned (SRT-BH414). If bulk excavations are planned ongoing risks to potential receptors is considered low.

Land Use / Activity	Source	Pathway	Potential Receptor	Nature of Potential Issue / Assessed Risk	Further Action / Management Recommended
Former smash repair business (northern block)	Impacts to soil horizons from spray booth, lubricant, degreasing, grease and oil/waste oil storage and handling and/or point source spills/leakage.	Migration of contaminants into underlying soil profile	Current site users Maintenance workers Future site users Onsite ecological receptors	Low concentrations of TRHs and PAHs recorded in this vicinity were lower than the human health assessment criteria. One exceedance of the ecological criteria for zinc and BaP was reported however risks are considered low.	No further action recommended.
		Migration of contaminants into groundwater underlying the site	Current site users Maintenance workers Future site users Onsite and offsite ecological receptors Offsite groundwater users	Concentrations of COPCs in groundwater at the site are low with some detections of PFAS and heavy metals which are considered representative of regional level groundwater quality. Risks to groundwater based receptors from this potential source are considered low.	No further action recommended.
		Vapour intrusion from volatile contaminants	Current site users Maintenance workers Future site users	Concentrations of TRHs and VOCs are low in the two closest soil vapour wells. The risks presented from soil vapour in the vicinity of this potential source are considered low.	No further action recommended.

Land Use / Activity	Source	Pathway	Potential Receptor	Nature of Potential Issue / Assessed Risk	Further Action / Management Recommended
Former woodworker business (carpenters / joinery) (northern block)	Use of varnish, paints, glues and solvents	Migration of contaminants into underlying soil and groundwater profile	Current site users Maintenance workers Future site users Onsite ecological receptors	Concentrations of COPCs are low at SRT-BH424 which is closest to this potential source, and as such risks are considered low. Risks to groundwater based receptors from this potential source are considered low.	No further action recommended.
Industrial activities / manufacturing (site wide)	Potential impacts to site soil and groundwater from historical industrial activities including potential sheet metal work on-site		Current site users Maintenance workers Future site users Onsite ecological receptors	Significantly elevated concentrations of TRHs and PAHs were recorded at SRT-BH426 in the vicinity of this potential source however contamination appears to be localized and restricted to shallow soils. The contamination may be associated with poor quality fill material or be present as a result of former industrial activities. It is likely that there has been some impact from former industrial / manufacturing uses across the site due to the extended use of the site for these purposes. Overall risks are considered low to moderate but considered high at SRT-BH426.	Remediation of the contamination is recommended if soils are to remain on site. If bulk excavations are planned for this area management via the waste disposal process may be possible (noting the likely presence of hazardous waste).

Land Use / Activity	Source	Pathway	Potential Receptor	Nature of Potential Issue / Assessed Risk	Further Action / Management Recommended
OFFSITE					
Off-site commercial / industrial sites	Leakage/spillage from potential offsite industrial/commercial sites with fuel and chemical (i.e. solvent) storage, transfer and use.	Subsurface migration onto site, subsurface soils and groundwater underlying the site	Current site users Maintenance workers Future site users Onsite ecological receptors	Significantly elevated concentrations of TRHs and PAHs were recorded at SRT-BH426 in fill materials close to the northern boundary of the site. It is likely that these are associated with site derived contamination or importation of fill material rather than offsite sources. In terms of the soil vapour, historical information indicates that there were sources of VOCs onsite and it is considered unlikely that offsite sources have significantly contributed to the concentrations observed.	No further action recommended.

14.0 DISCUSSION

14.1 Assessment of Contamination

Soil Assessment

Concentrations of BaP TEQ and total PAHs exceeded the adopted human health based criteria in SRT-BH425 (0.4 m bgl). Fill material including fragments of tile, ceramics, concrete and bricks were observed at a depth of 0.2 m bgl and at 0.4 m BGL fragments of brick and ash as well as a coal tar odour were observed during the site investigation. The concentration recorded for BaP TEQ (472 mg/kg) is greater than 250% of the 40 mg/kg criterion and is considered to be a hotspot. A review of analytical data from a sample collected at 1.0 m bgl in SRT-BH425 indicates detections of BaP TEQ and total PAHs at concentrations lower than the adopted human health criteria. This would imply that the exceedances are restricted to the near surface soil (i.e. <1.0 m) at this location. At SRT-BH426 which is located approximately 20 m to the east of SRT-BH425 concentrations of BaP TEQ and total PAHs were lower than the adopted assessment criteria. Further, at SRT-BH424 located 10 m to the south, concentrations of BaP and total PAHs are lower than the LOR. This would indicate that the observed elevated concentrations are localised to SRT-BH425 and not widespread.

The risks to current site users from the elevated PAH concentrations are considered low due to the presence of a continuous layer of concrete hardstand at the site. Risks to future site users are also considered low as, based on the conceptual design for the site, it is likely that the top 3.0 m of the site will be removed as part of construction works. The only exception to this would be the potential risk to workers during redevelopment who may be exposed to the contaminated soils i.e. during excavations. It is noted however that the likely exposure route would be via inhalation of dust generated during construction activities and/or dermal contact/ingestion of contaminated soils. The application of standard personal protective equipment (PPE) will mitigate against these potential risks. Further, if the conceptual design and/or redevelopment plans for the site were to change, a reassessment of these risks would be required particularly if soils were to remain on site.

Elevated concentrations of BaP were encountered at several locations across the site which exceeded the adopted ecological criterion for a commercial/industrial land use scenario. The exceedances of BaP were encountered in fill material and at several of these locations elevated concentrations of zinc and copper which exceeded the ecological criteria were also detected. These exceedances are considered to pose a low risk to ecological receptors given that the site is covered in continuous hardstand with very low potential for exposure to subsurface soils. In addition, based on the conceptual design for the site it is considered unlikely that these exceedances will pose a risk to future ecological receptors as it is likely that the top 3.0 m of the site will be removed as part of construction works. If the conceptual design and/or redevelopment plans for the site were to change, a reassessment of these risks would be required particularly if soils were to remain on site.

Elevated concentrations of TRHs (>C_{10}-C_{16}, >C_{16}-C_{34} and >C_{34}-C_{40}) were recorded at SRT-BH425 (0.4 m bgl) which exceeded the adopted ecological criteria and management limits. It is noted, however, that the TRH concentrations are lower than the criteria protective of human health (direct contact) in a commercial/industrial land use scenario. It is considered unlikely that the observed contamination will present a risk to current and future site workers on the basis of the conceptual design in that the soils up to 3.0 m depth will be removed from the site, particularly as TRH concentrations at a depth of 1.0 m BGL at SRT-BH425 are below the LOR.

The presence of bonded ACM (containing chrysotile) was confirmed by laboratory analysis at one location, SRT-BH420, at a depth of 0.5 m in fill material. The percentage of ACM was less than the applicable criterion for a commercial/industrial land use scenario however it exceeded the adopted criterion of ‘no asbestos detected’ (NAD) for surface soils as detailed in Table 7 of the NEPM (NEPC 2013). In addition, asbestos has been identified in previous environmental assessments at the site and it is likely to be present elsewhere within fill materials. Given the current configuration of the site, the restricted access to the site from potential

receptors and the nature of the ACM (bonded) encountered, it is considered that there is a low risk of exposure to potential receptors. The potential risk to future site users is considered low if the site is redeveloped for residential purposes as it is likely that significant excavations (for basements and other subsurface structures) will occur to facilitate the redevelopment which will enable the removal of asbestos contaminated fill and/or soils from the site. However, if the Site were to be redeveloped to a more sensitive land use this risk would increase, particularly if excavations were planned or landscaping which involved exposure of the soils from the impacted area. It is noted that previous environmental assessments identified ACM in fill material in other areas of the site.

Groundwater Assessment

A review of the groundwater analytical data indicates that significant contamination in shallow groundwater is not present at the site.

There are several heavy metals which were recorded at concentrations that exceed the adopted assessment criteria (copper, lead and zinc). These heavy metals are commonly found at elevated concentrations within urban areas in Sydney, particularly in areas with a historical and continued commercial/industrial land use. It is considered that these concentrations do not pose a significant risk to offsite ecological receptors, particularly given that the nearest watercourse is the Alexandra Canal which is located approximately 1.4 km from the site.

PCE was recorded at a concentration of 1 µg/L at SRT-GMW2A with concentrations lower than the LOR recorded at the remaining groundwater wells at the site. This is significantly lower than the elevated concentrations of PCE which were reported in previous environmental assessments (150 µg/L) (DP 2018) in close proximity to the former drycleaners (WLMW05 located close to the boundary with the adjacent station box construction site). The groundwater flow direction has been assessed as being in a general southerly direction and SRT-GMW1A, SRT-GMW2A and SRT-BH409 are considered to be hydraulically downgradient of the former drycleaners, former service station and former printers.

Concentrations of chloroform (16 µg/L) were detected in SRT-GMW2A at similar concentrations from groundwater wells in this vicinity (WLMW05 at 18 µg/L) (DP 2018) which were sampled during previous environmental assessments. However the concentrations are lower than the adopted assessment criteria.

Concentrations of PFOS (ranged from 0.12 to 0.42 µg/L) that exceeded the ADWG criterion of 0.07 µg/L and the recreational criterion of 0.7 µg/L were detected in SRT-BH419, SRT-BH426, SRT-GMW1A and SRT-GMW2A. The sum of PFHxS and PFOS was recorded at concentrations which exceeded the 99% species protection criterion of 0.00023 µg/L in groundwater wells SRT-BH426, SRT-GMW1A and SRT-GMW2A. This criterion is considered conservative and is adopted for high conservation value systems. However, 99% protection level is also adopted for chemicals that bioaccumulate and biomagnify in wildlife.

It is considered likely that the PFAS substances detected in the groundwater are reflective of a wider, regional level sources rather than specific to former site activities given that the site is located in an area underlain by the Botany Sands aquifer.

Soil Vapour Assessment

Concentrations of PCE were recorded at 8.4 mg/m^3 at SRT-BH416 which marginally exceeded the adopted soil vapour assessment criterion protective of human health (8 mg/m^3). The remaining soil vapour sampling locations recorded concentrations of PCE which were lower than the LOR or lower than the adopted assessment criterion in a commercial/industrial land use scenario.

There were several detections of other VOCs and volatile hydrocarbons (TRH C_5-C_8 and C_6-C_{10}) in soil vapour sampled at the site. Propene, acetone, 1,1,1-trichloroethane, chloroform, dichlorodifluoromethane,

trichloroethene and trichlorofluoromethane were recorded at concentrations lower than the adopted assessment criteria (where available). The majority of these detects were recorded in SRT-BH408 and QC200 (duplicate sample of SRT-BH415) with one detect recorded at SRT-BH416. It should be noted that the LORs for many of the VOCs and volatile hydrocarbons analysed in QC200 are much lower than those of the primary sample.

These sampling locations are situated hydraulically downgradient of the former service station, former drycleaners and former printers.

The risk presented by the PCE exceedance recorded at SRT-BH416 is considered low in the context of the conceptual design for the site as the concentration is marginally above the assessment criteria, the site is covered in a continuous layer of concrete hardstand and there are no underground structures currently in use at the site. In addition, based on visual and olfactory observations and corresponding VOC concentrations in soils to 3.0m BGL at SRT-BH416 and the surrounding area it is unlikely that there is significant contamination in the soils. It is considered likely that the recorded soil vapour concentrations are indicative of localised residual contamination. The results of the groundwater assessment incorporating one monitoring round also indicate that a significant VOC plume does not exist at the site as low concentrations of VOCs observed in groundwater wells which are hydraulically downgradient of the potential historic sources (former drycleaners, former service station and former printers).

The risk presented to future site users is considered low-moderate on the basis of the conceptual design for the site. It is likely that basements and other subsurface structures will be constructed as part of the redevelopment of the site and there is a potential risk of soil vapour intrusion into these. Mitigation measures can be factored into the design of the future development which will allow for the management of the potential risk. However, further assessment, in the form of additional targeted sampling locations and/or a human health risk assessment, would be beneficial to refine the source-pathway-receptor linkage.

14.2 Preliminary Waste Classification

A preliminary insitu waste classification assessment was undertaken of the fill material/soils underlying the site. The analytical results of the soils were compared against the criteria detailed in the *Waste Classification Guidelines Part 1: Classifying Waste* (NSW EPA 2014a) and *Waste Classification Guidelines Part 4: Acid sulfate soils* (NSW EPA 2014b). The preliminary waste classification results are summarised in **Table 11.**

The results of this preliminary classification indicate that, in the majority of bores, the elevated waste classifications were encountered in the fill material. The exception to this was related to a BaP concentration which is greater than the CT1 value for GSW at SRT-BH422 in natural soils. In addition, BaP concentrations at SRT-BH426 were greater than the CT1 value for GSW in natural soils. At both of these locations, TCLP analysis was not undertaken however the exceedances of the CT1 value (0.8 mg/kg) are marginal with both SRT-BH422 and SRT-BH426 recording concentrations of BaP at 0.9 mg/kg.

Hazardous waste was present at SRT-BH425 at a depth of 0.4 m BGL due to the presence of significantly elevated concentrations of BaP and sum of PAHs. The TCLP leachable fraction of the BaP is lower than the LOR at this location. Further, ash was identified in the soil sample at 0.4 m bgl and it is likely to be able to be pre-classified as GSW on the basis of the *General Approval of the Immobilisation of Contaminants in Waste* (*Immobilisation Approval 1999/05*) for ash, ash-contaminated natural excavated materials or coal-contaminated natural excavated materials.

Asbestos was detected in soil at a depth of 0.5 m BGL in SRT-BH420 which would render this material ‘special waste’ and would require disposal off-site at a licenced facility which is permitted to accept asbestos contaminated waste.

At SRT-BH414 and SRT-BH416 concentrations of lead were greater than t/he CT1 value for GSW. TCLP analysis was undertaken on selected samples with results indicating that the soils are classed as RSW.

The deeper soils are likely to be PASS/ASS based on the analytical results reported in

C. An exceedance of the adopted assessment criteria was detected at a depth of 5.5m at SRT-BH420.

Further sampling should be undertaken to confirm this preliminary assessment, once the soils have been exposed and representative samples can be collected of the fill material requiring removal from the Site.

14.3 Residential Land Use

A review of **Table A2** indicates that there are a number of exceedances for human health and ecological based criteria for a potential high-density residential land use scenario at the site.

The majority of the exceedances of the human health based criteria are at the same locations as those identified under a commercial/industrial land use scenario (Section 14.1). The exceedances recorded at the site which exceed the human health based criteria are for TRHs and PAHs and are generally restricted to a depth less than 0.5 m bgl.

Significantly elevated concentrations of BaP TEQ and total PAHs were recorded at SRT-BH425 at a depth of 0.4 m bgl, however, given the current configuration of the site these concentrations are unlikely to present a significant risk to current site users due to the presence of continuous concrete hardstand across the site. However, if redevelopment for residential purposes is planned, the concentrations of TRH (C_{10}-C_{16}) and PAH at SRT-BH425 are such that the soils would require remediation to render the site suitable for residential land use.

An exceedance of BaP TEQ was recorded at SRT-BH414 at a depth of 0.4 m bgl. It is likely that this is associated with fill material at this location. The management of contamination at SRT-BH414 would be similar to that at SRT-BH425 in that if redevelopment of the site for a residential land use is planned, remediation of the soils at this location would be required to render the site suitable for the intended land use.

As discussed in **Section 14.1**, bonded ACM (containing chrysotile) was confirmed by laboratory analysis at one location, SRT-BH420, at a depth of 0.5 m in fill material. The potential risk to future site users is considered low if the site is redeveloped for residential purposes as it is likely that significant excavations (for basements and other subsurface structures) will occur to facilitate the redevelopment which will enable the removal of asbestos contaminated fill and/or soils from the site.

There are multiple heavy metal and BaP exceedances of the adopted ecological based criteria under an urban residential and public open space land use scenario. These are similar to those encountered under a commercial/industrial land use and it is considered that a similar risk profile exists under both scenarios. A review of the exceedances indicates that the maximum depth of impacted soil is to 1.5 m bgl. It is considered likely that the site will undergo significant excavations under either land use scenario discussed in this ESA and the risk to ecological receptors is considered low. If redevelopment plans for the site were to change, a reassessment of these risks would be required particularly if soils were to remain on site.

The locations of exceedances of the adopted criteria are identified on **Figure 3** (soil exceedances commercial/industrial land use), **Figure 4** (groundwater exceedances), **Figure 5** (soil vapour exceedances) and **Figure 6** (soil exceedances residential B land use).

15.0 CONCLUSIONS AND RECOMMENDATIONS

15.1 Conclusions

The results of the ESA indicate that there has been some impact to the quality of the soil, soil vapour and groundwater as a result of historical site and potentially off-site activities, however, it is considered that the contamination identified does not pose a significant risk to the suitability of the site for the proposed commercial/industrial land use providing appropriate remediation/management of identified contamination is undertaken.

Information provided to Golder-Douglas in The Brief indicated that the site was an active worksite and that there were risks associated with disruption to construction activities. As a result some preferred sampling locations were not available, particularly on the former service station site. In addition, the assessment of soil vapour and groundwater undertaken in this ESA is based on one round of sampling and analysis.

Soil

A PAH hotspot exists at SRT-BH425 and remediation will be required to render the site suitable for the proposed commercial/industrial land use. The preliminary waste class identifies these soils as potentially hazardous waste however it is likely that the *Immobilisation Approval 1999/05* can be applied to these soils due to the presence of ash in the fill material. However, this is contingent on the waste classification of the soils for other analytes (i.e. hydrocarbons) will be required to be undertaken.

It is considered likely that the most effective remediation approach will be either ‘dig or dump’ or ‘cap and contain’ or a combination of both. The selected approach will need to be considered in the context of likely redevelopment and regulatory requirements.

There is fill material present across the site to a maximum depth of 1.3 m BGL. The fill material is impacted with heavy metals, PAHs and some hydrocarbons but at levels which would not preclude the redevelopment of the site.

Asbestos has been identified in near surface soils during the ESA and this is consistent with previous environmental assessments completed at the site and on the adjacent station box construction site. There will be a requirement to be manage the asbestos during construction activities associated with the redevelopment of the site.

It is possible that all or some of the USTs associated with the former service station, identified during the Phase 1 historical review of the site, may remain insitu as information provided by SafeWork NSW did not indicate that they had been removed.

If the conceptual design and/or redevelopment plans for the site were to change, a reassessment of the risks would be required particularly if soils were to remain on site.

Groundwater

A review of the groundwater analytical data indicates that significant contamination in shallow groundwater is not present at the site.

PFAS substances were identified in the groundwater at the site which exceeded the adopted assessment criteria. Management of the groundwater during construction will be required particularly where activities intersect the groundwater table.

Soil Vapour

On the basis of the analytical results to date consisting of one round of monitoring, the results indicate that there is an exceedance of the adopted commercial/industrial criterion. The exceedance is recorded at a depth

of 2.0 m bgl however the adopted criterion is applicable to soils between 0 and 1.0 m bgl. Further the exceedance is marginal and based on one round of monitoring.

15.2 Recommendations

The following is recommended to assist Sydney Metro with the interim management of the site;

Soils

Remediation of the PAH identified at SRT-BH425 in the north eastern corner of the site could be performed as part of construction works during the redevelopment of the site. If further contamination is encountered in the soils surrounding this location, these can be addressed at that time.

It is recommended that a ground penetrating radar (GPR) survey across the former service station site be performed to assess the potential presence of USTs. If USTs are identified insitu, it is recommended to remove these prior to construction activities as the remediation of potentially impacted soils has the ability to impact construction timeframes, particularly if regulatory involvement is necessary.

Significantly elevated concentrations of BaP TEQ and total PAHs were recorded at SRT-BH425 at a depth of 0.4 m bgl, however, given the current configuration of the site these concentrations are unlikely to present a significant risk to current site users due to the presence of continuous concrete hardstand across the site. However if excavations are planned in this area management of these soils will be required to protect current and future site workers. The elevated concentrations of volatile TRH C_{10}-C_{16}, benzene and naphthalene at SRT-BH425 exceed the criteria protective of human health from vapour intrusion/inhalation however the risk to current site users is considered low give the current configuration of the site.

Groundwater

Ongoing groundwater monitoring is recommended to assess seasonal variation of contaminant concentrations in the newly installed and existing groundwater wells at the site.

Consideration of the potential need to undertake ongoing groundwater treatment during construction (e.g. dewatering) due to the presence of PFAS substances underlying the site.

Soil Vapour

It is recommended to undertake additional soil vapour monitoring to further assess the soil vapour exceedance encountered at the SRT-BH416 and potential temporal variations in soil vapour concentrations across the site.

Preliminary Waste Class

Further sampling and analysis either prior to or during construction activities at the site is recommended to refine the preliminary waste classifications detailed in this report.

15.2.1 Duty to Report Contamination

It is considered that there is likely to be a requirement to report the identified impact to soil and groundwater contamination at the site and the inferred duty to report the contamination to the NSW EPA under section 60 of the *CLM Act*. It is recommended that Sydney Metro seek legal advice regarding their duty under the legislation. The reporting of the contamination, if required, would be in the format prescribed in The Guidelines on the Duty to Report Contamination under the *Contaminated Land Management Act 1997* (NSW EPA 2015).

Onsite Soil Contamination

In the case of onsite soil contamination, notification is required if:

"*the 95 % upper confidence limit on the arithmetic average concentration of a contaminant in or on soil is equal to or above the Health Investigation Level and/or Health Screening Level for that contaminant for the current or approved use of the respective on-site land, as specified in Section 6, Schedule B1 of the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC 2013)*

OR

the concentration of a contaminant in an individual soil sample is equal to or more than 250% of the Health Investigation Level and/or Health Screening Level for that contaminant for the current or approved use of the respective on-site land, as specified in Section 6, Schedule B1 of the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC 2013)

AND

a person has been or foreseeably will be exposed to the contaminant or a by-product of the contaminant".

The reported BaP TEQ concentrations in fill material at the site exceed the HIL/HSL nominated in Schedule B1 of the NEPM (NEPC 2013) and identified in **Table 14** for a commercial/industrial land use. It is considered that these impacts are related to an on-site source where the concentrations are greater then 250% of the HIL and there is risk that a person will be exposed to the contaminant in the future. The risk of exposure is primarily related to the potential for construction workers during the proposed redevelopment of the site. A risk of exposure exists if the soils are to remain on site under a commercial/industrial land use.

With respect to potential future residential land use, the reported TRH C_{10}-C_{16}, TRH C_{16}-C_{34} naphthalene, benzene, BaP TEQ and total PAH at the site exceed the HIL/HSLs nominated in Schedule B1 of the NEPM (NEPC 2013) and identified in **Table A2**. It is considered that these impacts are related to an on-site source where the concentrations are greater than 250% of the HIL/HSL and there is risk that a person will be exposed to the contaminant in the future. The risk is primarily related to the potential for construction workers exposure during the proposed redevelopment of the site.

Groundwater

In the case of groundwater contamination, notification is required if:

"*the contaminant has entered or will foreseeably enter groundwater or surface water*"

AND

the concentration of a contaminant in the groundwater or surface water is, or will foreseeably be, above the groundwater investigation level for that contaminant as specified in Section 6, Schedule B1 of the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC 2013)

AND

the concentration of the contaminant in the groundwater or surface water will foreseeably continue to remain above the specified concentration".

The concentrations of PFAS and heavy metals are considered to be representative of regional level, diffuse urban contamination and as detailed in Section 2.5 of the DTR guidelines (NSW EPA 2015), such instances are not expected to be captured by the notification process. It is considered that there is no requirement to report the contamination on the basis of the information and outcomes of this ESA. However further groundwater monitoring rounds are recommended to provide additional data for assessment of the source-pathway-receptor linkage.

Vapour Intrusion

In the case for soil vapour (vapour inhalation pathway), notification is required if:

"*the concentration of a contaminant in an individual soil vapour sample from the land is equal to or above the interim soil vapour health investigation level for volatile organic chlorinated compounds for the current or approved use of the respective on-site or off-site land as specified in Section 6, Schedule B1 of the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC 2013)*

OR

the concentration of a contaminant in an individual soil sample from the land is equal to or above the soil health screening level for vapour intrusion for the current or approved use of the respective on-site or off-site land as specified in Section 6, Schedule B1 of the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC 2013)

OR

the concentration of a contaminant in a groundwater sample from a site is equal to or above the groundwater health screening level for vapour intrusion for the current or approved use of the respective on-site or off-site land as specified in Section 6, Schedule B1 of the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC 2013)

OR

the concentration of a contaminant in an individual soil vapour sample from the land is equal to or above the soil vapour health screening level for vapour intrusion for the current or approved use of the respective on-site or off-site land as specified in Section 6, Schedule B1 of the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC 2013)

AND

the concentration of the contaminant will continue to remain equal to or above the specified concentration,

AND

a person has been or foreseeably will be exposed to the contaminant or any by-product of the contaminant".

Concentrations of PCE in soil vapour exceed the soil vapour criterion for a 'commercial/industrial land use' and 'residential B' land use scenarios. In addition, concentrations in soil of TRH C_{10}-C_{16}, naphthalene and benzene exceed the HSLs as prescribed in Section 6 , Schedule B1 of the NEPM (NENC 2013) for a residential land use scenario. Under the current configuration of the site the risks are considered low and unlikely to impact current site users. Nevertheless there is the potential for the contaminants to remain equal to or above the specified concentration AND it is possible that a person will be exposed to the contaminant or any by-product of the contaminant. Such a scenario may arise during construction where workers are potentially exposed to contaminated soils and soil vapour. Exposure may be also possible post development where basements have been constructed and soil vapour intrusion is a risk.

Further soil vapour and groundwater monitoring rounds are recommended to provide additional data for assessment of the potential risks.

16.0 LIMITATIONS

Your attention is drawn to the document titled - “Important Information Relating to this Report”, which is included in **Appendix L** of this report. The statements presented in that document are intended to inform a reader of the report about its proper use. There are important limitations as to who can use the report and how it can be used. It is important that a reader of the report understands and has realistic expectations about those matters. The Important Information document does not alter the obligations Golder Associates has under the contract between it and its client.

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TABLES

					Location_Code	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH410	SRT-BH410	SRT-BH410	SRT-BH411	SRT-BH411	SRT-BH411	SRT-BH411	SRT-BH412	SRT-BH412	SRT-BH412	SRT-BH412	SRT-BH413A
					Sample_Depth_Avg	0.2	0.5	1.5	2	3	0.5	0.5	0.5	1.5	2	3	0.2	0.8	1.5	0.15	0.5	1	2	0.11	0.5	1	2	0.5	
					Sampled_Date_Time	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	10-06-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	28-10-18
					Field_ID	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0	SRT_BH408_3.0	QCA101	QCB101	SRT_BH409_0.5	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH411_0.15	SRT_BH411_0.5	SRT_BH411_1.0	SRT_BH411_2.0	SRT_BH412_0.11	SRT_BH412_0.5	SRT_BH412_1.0	SRT_BH412_2.0	SRT-BH413A-0.5
ChemName	Units	EQL	NEPM 2013 Mgmt Limits - Commercial and industrial, Coarse Soil	SMW NEPM 2013 ESL / EIL- Commercial and industrial	SMW NEPM 2013 HSL/HIL- Commercial / Industrial D Soil																							
Asbestos																												
Asbestos in soil (>7mm ACM)	%w/w	0.01			**0.05**	<0.01	-	-	-	-	<0.01	-	<0.01	-	-	-	<0.01	-	-	<0.01	-	-	-	-	<0.01	<0.01	-	<0.01
Asbestos in soil (<7mm AF/FA)	%w/w	0.001			**0.001**	<0.001	-	-	-	-	<0.001	-	<0.001	-	-	-	<0.001	-	-	<0.001	-	-	-	-	<0.001	<0.001	-	<0.001
Weight Asbestos in soil (>7mm ACM)	g	0.1				<0.1	-	-	-	-	<0.1	-	<0.1	-	-	-	<0.1	-	-	<0.1	-	-	-	-	<0.1	<0.1	-	<0.1
Weight Asbestos in soil (<7mm AF/FA)	g	0.0004				<0.0004	-	-	-	-	<0.0004	-	<0.0004	-	-	-	<0.0004	-	-	<0.0004	-	-	-	-	<0.0004	<0.0004	-	<0.0004
Asbestos Type	No					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos Detected	No	0.1			**NAD**	NAD	-	-	-	-	NAD	NAD	NAD	-	-	-	NAD	-	-	NAD	-	-	-	-	NAD	NAD	-	NAD
Asbestos Fibres Detected	Fibres	5				NFD	-	-	-	-	NFD	-	NFD	-	-	-	NFD	-	-	NFD	-	-	-	-	NFD	NFD	-	NFD
Fibrous Asbestos >7mm	mg/kg	0.0004				<0.0004	-	-	-	-	<0.0004	-	<0.0004	-	-	-	<0.0004	-	-	<0.0004	-	-	-	-	<0.0004	<0.0004	-	<0.0004
Mass of test sample	g	0.1				488	-	-	-	-	35.7	-	394	-	-	-	541	-	-	756	-	-	-	-	618	536	-	521
Sample weight (dry)	g	0.01				488	-	-	-	-	35.7	-	394	-	-	-	541	-	-	756	-	-	-	-	618	536	-	521
Moisture																												
Moisture	%	0.1				9.7	2.2	4.2	4.8	3.3	3	3.3	4.4	4.8	4.2	31.1	8.7	5.6	6.8	-	6.7	4	3.3	10.8	10.9	9.4	8.7	11.3
TRHs																												
TRH C6 - C10 Fraction F1	mg/kg	10	**700**			<10	<10	-	<10	-	<10	<25	<10	<10	-	<10	<10	<10	<10	-	<10	<10	<10	-	<10	<10	<10	<10
TRH C6 - C10 Fraction Less BTEX F1	mg/kg	10		**215**[#2]	**260**	<10	<10	-	<10	-	<10	<25	<10	<10	-	<10	<10	<10	<10	-	<10	<10	<10	-	<10	<10	<10	<10
TRH >C10 - C16 Fraction F2	mg/kg	50	**1000**	**170**[#2]		<50	<50	-	<50	-	<50	<50	<50	<50	-	<50	<50	<50	<50	-	<50	<50	<50	-	<50	<50	<50	<50
TRH >C10 - C16 Fraction Less Naphthalene (F2)	mg/kg	50			**20000**[#3]	<50	<50	-	<50	-	<50	<50	<50	<50	-	<50	<50	<50	<50	-	<50	<50	<50	-	<50	<50	<50	<50
TRH >C16 - C34 Fraction F3	mg/kg	100	**3500**	**1700**[#2]	**27000**[#3]	<100	<100	-	<100	-	<100	<100	<100	<100	-	<100	<100	<100	<100	-	<100	<100	<100	-	**240**	<100	<100	<100
TRH >C34 - C40 Fraction F4	mg/kg	100	**10000**	**3300**[#2]	**38000**[#3]	<100	<100	-	<100	-	<100	<100	<100	<100	-	<100	<100	<100	<100	-	<100	<100	<100	-	**160**	<100	<100	<100
TRH+C10 - C40 (Sum of total) (Lab Reported)	mg/kg	50				<50	<50	-	<50	-	<50	<50	<50	<50	-	<50	<50	<50	<50	-	<50	<50	<50	-	**400**	<50	<50	<50
BTEXN																												
Benzene	mg/kg	0.2		**75**[#2]	**3**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	0.5		**135**[#2]	**99000**[#3]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	0.5		**165**[#2]	**27000**[#3]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Xylenes (m & p)	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Xylene (o)	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5		**95**[#2]	**230**	<0.5	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Total BTEX	mg/kg	0.2				<0.2	<0.2	-	<0.2	-	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2
Naphthalene	mg/kg	1		**370**	**11000**[#3]	<1	<1	-	<1	-	<1	<1	<1	<1	-	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1
Heavy Metals																												
Arsenic	mg/kg	5		**160**[#4]	**3000**	<5	<5	-	<5	-	<5	<4	<5	<5	-	<5	<5	<5	<5	-	<5	<5	<5	-	<5	<5	<5	10
Cadmium	mg/kg	1			**900**	<1	<1	-	<1	-	<1	<0.4	<1	<1	-	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1
Chromium	mg/kg	2		**540**[#5]	**3600**[#5]	<2	<2	-	<2	-	<2	<1	<2	<2	-	<2	**4**	**3**	**3**	-	**3**	<2	<2	-	**11**	**7**	**5**	**8**
Copper	mg/kg	5		**85**[#7]	**240000**	**6**	<5	-	<5	-	<5	**4**	<5	<5	-	<5	**6**	<5	<5	-	**27**	<5	<5	-	**21**	**12**	<5	**72**
Lead	mg/kg	5		**1800**	**1500**	**55**	<5	-	<5	-	<5	**8**	<5	<5	-	<5	**20**	<5	<5	-	**95**	<5	<5	-	**28**	**63**	<5	**580**
Mercury	mg/kg	0.1			**730**	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	**0.3**	<0.1	<0.1	-	<0.1	<0.1	<0.1	**1.3**
Nickel	mg/kg	2		**95**[#8]	**6000**	<2	<2	-	<2	-	<2	<1	<2	<2	-	<2	**2**	<2	<2	-	**2**	<2	<2	-	**7**	**4**	**4**	**10**
Zinc	mg/kg	5		**440**[#8]	**400000**	**73**	<5	-	<5	-	**5**	**16**	<5	**6**	-	<5	**92**	<5	<5	-	**108**	<5	<5	-	**54**	**126**	**69**	**314**
PAHs																												
Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2				-	-	-	-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Anthracene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	**0.8**	<0.5	<0.5	<0.5
Benz(a)anthracene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	**1.2**	<0.5	<0.5	**0.6**
Benzo(a)pyrene	mg/kg	0.5		**1.4**		<0.5	<0.5	-	<0.5	-	<0.5	<0.05	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	**1.2**	<0.5	<0.5	**0.6**
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5			**40**	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	**1.4**	<0.5	<0.5	**0.7**
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5			**40**	**0.6**	**0.6**	-	**0.6**	-	**0.6**	<0.5	**0.6**	**0.6**	-	**0.6**	**0.6**	**0.6**	**0.6**	-	**0.6**	**0.6**	**0.6**	-	**1.8**	**0.6**	**0.6**	**1**
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5			**40**	**1.2**	**1.2**	-	**1.2**	-	**1.2**	<0.5	**1.2**	**1.2**	-	**1.2**	**1.2**	**1.2**	**1.2**	-	**1.2**	**1.2**	**1.2**	-	**2**	**1.2**	**1.2**	**1.3**
Benzo(b)&(j)fluoranthene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	**1.2**	<0.5	<0.5	**0.7**
Benzo(g,h,i)perylene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	**0.6**	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Chrysene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	**1.2**	<0.5	<0.5	**0.6**
Dibenz(a,h)anthracene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Fluoranthene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	**0.5**	<0.5	<0.5	-	**3.4**	**0.8**	<0.5	**0.9**
Fluorene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Naphthalene	mg/kg	0.5		**370**	**11000**[#3]	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Phenanthrene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	**2.8**	<0.5	<0.5	<0.5
Pyrene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	**0.5**	<0.5	<0.5	-	**3.6**	**0.8**	<0.5	**1**
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5			**4000**	<0.5	<0.5	-	<0.5	-	<0.5	<0.05	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	**1**	<0.5	<0.5	-	**16**	**1.6**	<0.5	**4.4**
Organochlorine Pesticides																												
a-BHC	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Aldrin	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Dieldrin	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	**0.12**	-	-	<0.05	-	**0.23**	-	<0.05
Aldrin & Dieldrin (Sum of total) (Lab Reported)	mg/kg	0.05			**45**	-	<0.05	-	-	-	<0.05	-	<0.05	-	-	-	-	<0.05	-	-	**0.12**	-	-	<0.05	-	**0.23**	-	<0.05
b-BHC	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
cis-Chlordane	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
trans-Chlordane	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Chlordane (Sum of total)	mg/kg	0.05			**530**	-	<0.05	-	-	-	<0.05	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
d-BHC	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
DDD	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
DDE	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
DDT	mg/kg	0.2		**640**		-	<0.2	-	-	-	<0.2	<0.1	<0.2	-	-	-	-	<0.2	-	-	<0.2	-	-	<0.2	-	<0.2	-	<0.2
DDT+DDE+DDD (Sum of total) (Lab Reported)	mg/kg	0.05			**3600**	-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Endosulfan	mg/kg	0.05			**2000**	-	<0.05	-	-	-	<0.05	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Endosulfan I	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Endosulfan II	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Endosulfan sulphate	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Endrin	mg/kg	0.05			**100**	-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Endrin aldehyde	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Endrin ketone	mg/kg	0.05				-	<0.05	-	-	-	<0.05	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
g-BHC	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Heptachlor	mg/kg	0.05			**50**	-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Heptachlor epoxide	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Hexachlorobenzene	mg/kg	0.05			**80**	-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Methoxychlor	mg/kg	0.2			**2500**	-	<0.2	-	-	-	<0.2	<0.1	<0.2	-	-	-	-	<0.2	-	-	<0.2	-	-	<0.2	-	<0.2	-	<0.2
Organophosphorous Pesticides																												
Azinphos-methyl	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Bromophos-ethyl	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Carbophenothion	mg/kg	0.05				-	<0.05	-	-	-	<0.05	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Chlorfenvinphos	mg/kg	0.05				-	<0.05	-	-	-	<0.05	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Chlorpyriphos	mg/kg	0.05			**2000**	-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Chlorpyriphos-methyl	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Demeton-s-methyl	mg/kg	0.05				-	<0.05	-	-	-	<0.05	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Diazinon	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Dichlorvos	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Dimethoate	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Ethion	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Fenamiphos	mg/kg	0.05				-	<0.05	-	-	-	<0.05	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Fenitrothion	mg/kg	0.1				-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenthion	mg/kg	0.05				-	<0.05	-	-	-	<0.05	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Malathion	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Parathion-methyl	mg/kg	0.2				-	<0.2	-	-	-	<0.2	-	<0.2	-	-	-	-	<0.2	-	-	<0.2	-	-	<0.2	-	<0.2	-	<0.2
Monocrotophos	mg/kg	0.2				-	<0.2	-	-	-	<0.2	-	<0.2	-	-	-	-	<0.2	-	-	<0.2	-	-	<0.2	-	<0.2	-	<0.2
Parathion	mg/kg	0.2				-	<0.2	-	-	-	<0.2	<0.1	<0.2	-	-	-	-	<0.2	-	-	<0.2	-	-	<0.2	-	<0.2	-	<0.2
Pirimphos-ethyl	mg/kg	0.05				-	<0.05	-	-	-	<0.05	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Prothiofos	mg/kg	0.05				-	<0.05	-	-	-	<0.05	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-	<0.05	-	<0.05
Ronnel	mg/kg	0.1				-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Location_Code						SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH410	SRT-BH410	SRT-BH410	SRT-BH411	SRT-BH411	SRT-BH411	SRT-BH411	SRT-BH412	SRT-BH412	SRT-BH412	SRT-BH412	SRT-BH413A
Sample_Depth_Avg						0.2	0.5	1.5	2	3	0.5	0.5	0.5	1.5	2	3	0.2	0.8	1.5	0.15	0.5	1	2	0.11	0.5	1	2	0.5
Sampled_Date_Time						06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	10-06-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	28-10-18
Field_ID						SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0	SRT_BH408_3.0	QCA101	QCB101	SRT_BH409_0.5	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH411_0.15	SRT_BH411_0.5	SRT_BH411_1.0	SRT_BH411_2.0	SRT_BH412_0.11	SRT_BH412_0.5	SRT_BH412_1.0	SRT_BH412_2.0	SRT-BH413A-0.5
ChemName	**Units**	**EQL**	NEPM 2013 Mgmt Limits - Commercial and industrial, Coarse Soil	SMW NEPM 2013 ESL / EIL- Commercial and industrial	SMW NEPM 2013 HSL/HIL- Commercial / Industrial D Soil																							
Phenols																												
Phenolics (Sum of total)	mg/kg	1				-	<1	-	-	-	<1	<5	<1	-	-	-	-	<1	-	-	<1	-	-	<1	-	<1	-	<1
Polychlorinated Biphenyls																												
Aroclor 1016	mg/kg	0.1				-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1232	mg/kg	0.1				-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1242	mg/kg	0.1				-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1248	mg/kg	0.1				-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1254	mg/kg	0.1				-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1260	mg/kg	0.1				-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1221	mg/kg	0.1				-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCB (Sum of Total-Lab Reported)	mg/kg	0.1			**7**	-	<0.1	-	-	-	<0.1	<0.1	<0.1	-	-	-	-	<0.1	-	-	<0.1	-	-	<0.1	-	0.1	-	<0.1
Volatile Organic Compounds																												
1,4-Dichlorobenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
4-Chlorotoluene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
Cyclohexane	mg/kg	1				-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichlorobenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
1,2,4-Trichlorobenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
1,2-Dichlorobenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
1,3-Dichlorobenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
2-Chlorotoluene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
Bromobenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
Chlorobenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
1,2,4-trimethylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
1,3,5-Trimethylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
Isopropylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
n-Butylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
n-Propylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
p-Isopropyltoluene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
sec-Butylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
Styrene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
tert-Butylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
Methyl Ethyl Ketone	mg/kg	5				-	<5	<5	-	<5	<5	-	<5	-	<5	-	-	-	<5	-	-	-	-	-	-	-	-	<5
2-Hexanone	mg/kg	5				-	<5	<5	-	<5	<5	-	<5	-	<5	-	-	-	<5	-	-	-	-	-	-	-	-	<5
Methyl iso-butyl ketone	mg/kg	5				-	<5	<5	-	<5	<5	-	<5	-	<5	-	-	-	<5	-	-	-	-	-	-	-	-	<5
Vinyl acetate	mg/kg	5				-	<5	<5	-	<5	<5	-	<5	-	<5	-	-	-	<5	-	-	-	-	-	-	-	-	<5
1,1,1,2-Tetrachloroethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
1,1,2,2-Tetrachloroethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
1,1,1-Trichloroethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
1,1,2-Trichloroethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
1,2,3-Trichloropropane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
1,2-Dibromo-3-chloropropane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
1,2-Dibromoethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
1,1-Dichloroethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
1,2-Dichloroethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
1,1-Dichloroethene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
cis-1,2-Dichloroethene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
trans-1,2-dichloroethene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
1,2-Dichloropropane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
1,3-Dichloropropane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
2,2-Dichloropropane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
1,1-Dichloropropene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
cis-1,3-Dichloropropene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
trans-1,3-dichloropropene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
cis-1,4-Dichloro-2-butene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
trans-1,4-Dichloro-2-butene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
Bromochloromethane	mg/kg	1				-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
Bromoform	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
Bromomethane	mg/kg	5				-	<5	<5	-	<5	<5	<1	<5	-	<5	-	-	-	<5	-	-	-	-	-	-	-	-	<5
Carbon disulfide	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
Carbon tetrachloride	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
Chlorodibromomethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
Chloroethane	mg/kg	5				-	<5	<5	-	<5	<5	<1	<5	-	<5	-	-	-	<5	-	-	-	-	-	-	-	-	<5
Chloroform	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
Chloromethane	mg/kg	5				-	<5	<5	-	<5	<5	<1	<5	-	<5	-	-	-	<5	-	-	-	-	-	-	-	-	<5
Dibromomethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
Dichlorodifluoromethane	mg/kg	5				-	<5	<5	-	<5	<5	<1	<5	-	<5	-	-	-	<5	-	-	-	-	-	-	-	-	<5
Hexachlorobutadiene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
Iodomethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
Pentachloroethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
Trichloroethene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
Tetrachloroethene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-	-	<0.5
Trichlorofluoromethane	mg/kg	5				-	<5	<5	-	<5	<5	<1	<5	-	<5	-	-	-	<5	-	-	-	-	-	-	-	-	<5
Vinyl chloride	mg/kg	5				-	<5	<5	-	<5	<5	<1	<5	-	<5	-	-	-	<5	-	-	-	-	-	-	-	-	<5
Perfluorinated Compounds																												
10:2 Fluorotelomer sulfonic acid	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:2 Fluorotelomer sulfonic acid	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8:2 Fluorotelomer sulfonate	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Et-FOSA	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Et-FOSE	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Me-FOSA	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Me-FOSE	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid (PFBA)	mg/kg	0.001				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonic acid	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-pentanoic acid (PFPeA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentane sulfonic acid	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PFDoS	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum of PFHxS and PFOS (lab reported)	mg/kg	0.0002			**20**[#5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum of WA DER PFAS (n=10)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum of PFASs (n=28)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanesulfonic acid (PFBS)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002		**0.14**[#1]		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanoate (PFOA)	mg/kg	0.0002			**50**[#5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanesulfonic acid (PFHxS)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorononanoic acid (PFNA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonamide (PFOSA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Env Stds Comments
#1:PFAS National Environmental Management Plan (NEMP), Criteria for commercial / industrial land use
#2:Most conservative of the ESLs for coarse or fine grained soils adopted
#3:CRC Care (2011) Direct contact criteria, commercial / industrial landuse
#4:Aged Arsenic (present in soil for > 2 years)
#5:EIL calculated using site specific soil qualities, EIL value for CrIII
#6:HIL value for CrVI
#7:EIL based on lower limit for aged contamination present in schedule B5a of the NEPM (NECP 2013)
#8:EIL calculated using site specific soil qualities

AD: Asbestos detected
NAD: No asbestos detected
NFD: No fibres detected
* No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.

					Location_Code	SRT-BH413A	SRT-BH413A	SRT-BH414	SRT-BH415	SRT-BH415	SRT-BH415	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH418	SRT-BH418	SRT-BH418	SRT-BH418	SRT-BH419	SRT-BH419	SRT-BH419	SRT-BH419	SRT-BH419	SRT-BH420	SRT-BH420
					Sample_Depth_Avg	1.5	3	0.4	0.5	0.5	0.5	0.25	0.5	1	1.5	3	0.5	1.5	2	3	0.2	1	1	1	0.25	1	1	1	1.05	0.5	1
					Sampled_Date_Time	28-10-18	28-10-18	13-10-18	20-10-18	20-10-18	20-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	27-10-18	27-10-18	27-10-18	27-10-18	13-10-18	13-10-18	13-10-18	13-10-18	20-10-18	06-10-18	06-10-18
					Field_ID	SRT-BH413A-1.5	SRT-BH413A-3.0	SRT-BH414_0.4	SRT-BH415-0.5	SRT-QCA106	QCB106	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT-BH418-0.2	SRT-BH418-1.0	SRT-QCA109	SRT-QCB109	SRT_BH419_0.25	SRT-BH419_1.0	SRT_QCA104	QCB104	SRT-BH419-1.05	SRT-BH420-0.5	SRT-BH420-1.0
ChemName	Units	EQL	NEPM 2013 Mgmt Limits - Commercial and industrial, Coarse Soil	SMW NEPM 2013 ESL / EIL- Commercial and industrial	SMW NEPM 2013 HSL/HIL- Commercial / Industrial D Soil																													
Asbestos																																	
Asbestos in soil (>7mm ACM)	%w/w	0.01			**0.05**	-	-	<0.01	<0.01	-	-	<0.01	-	<0.01	-	-	<0.01	-	-	-	<0.01	<0.01	-	-	-	<0.01	-	-	<0.01	<0.01	-
Asbestos in soil (<7mm AF/FA)	%w/w	0.001			**0.001**	-	-	<0.001	<0.001	-	-	<0.001	-	<0.001	-	-	<0.001	-	-	-	<0.001	<0.001	-	-	-	<0.001	-	-	<0.001	<0.001	-
Weight Asbestos in soil (>7mm ACM)	g	0.1				-	-	<0.1	<0.1	-	-	<0.1	-	<0.1	-	-	<0.1	-	-	-	<0.1	<0.1	-	-	-	<0.1	-	-	<0.1	**0.7**	-
Weight Asbestos in soil (<7mm AF/FA)	g	0.0004				-	-	<0.0004	<0.0004	-	-	<0.0004	-	<0.0004	-	-	<0.0004	-	-	-	<0.0004	<0.0004	-	-	-	<0.0004	-	-	<0.0004	<0.0004	-
Asbestos Type	No					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**Ch**	-
Asbestos Detected	No	0.1			**NAD**	-	-	NAD	NAD	-	-	NAD	-	NAD	-	-	NAD	-	-	-	NAD	NAD	-	-	-	NAD	-	NAD	NAD	**AD***	-
Asbestos Fibres Detected	Fibres	5				-	-	NFD	NFD	-	-	NFD	-	NFD	-	-	NFD	-	-	-	NFD	NFD	-	-	-	NFD	-	-	NFD	NFD	-
Fibrous Asbestos >7mm	mg/kg	0.0004				-	-	<0.0004	<0.0004	-	-	<0.0004	-	<0.0004	-	-	<0.0004	-	-	-	<0.0004	<0.0004	-	-	-	<0.0004	-	-	<0.0004	<0.0004	-
Mass of test sample	g	0.1				-	-	620	520	-	-	532	-	408	-	-	486	-	-	-	517	638	-	-	-	667	-	-	557	1090	-
Sample weight (dry)	g	0.01				-	-	620	520	-	-	532	-	408	-	-	486	-	-	-	517	638	-	-	-	667	-	-	557	1090	-
Moisture																																	
Moisture	%	0.1				9.7	3.9	14	8.8	8.9	6.6	13	13.2	16.7	31.6	6.2	13.8	6.1	5.1	4.7	9.4	4.4	5.4	4.6	15.6	14.3	13.5	12	17.6	11	12.9
TRHs																																	
TRH C6 - C10 Fraction F1	mg/kg	10	**700**			<10	<10	<10	<10	<10	<25	<10	<10	-	<10	<10	<10	<10	-	<10	<10	<10	<10	<25	<10	<10	<10	<25	<10	<10	<10
TRH C6 - C10 Fraction Less BTEX F1	mg/kg	10		**215**[#2]	**260**	<10	<10	<10	<10	<10	<25	<10	<10	-	<10	<10	<10	<10	-	<10	<10	<10	<10	<25	<10	<10	<10	<25	<10	<10	<10
TRH >C10 - C16 Fraction F2	mg/kg	50	**1000**	**170**[#2]		<50	<50	<50	<50	<50	<50	<50	<50	-	<50	<50	<50	<50	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
TRH >C10 - C16 Fraction Less Naphthalene (F2)	mg/kg	50			**20000**[#3]	<50	<50	<50	<50	<50	<50	<50	<50	-	<50	<50	<50	<50	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
TRH >C16 - C34 Fraction F3	mg/kg	100	**3500**	**1700**[#2]	**27000**[#3]	<100	<100	**430**	<100	<100	<100	<100	<100	-	<100	<100	<100	<100	-	<100	**210**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
TRH >C34 - C40 Fraction F4	mg/kg	100	**10000**	**3300**[#2]	**38000**[#3]	<100	<100	**110**	<100	<100	<100	<100	<100	-	<100	<100	<100	<100	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
TRH+C10 - C40 (Sum of total) (Lab Reported)	mg/kg	50				<50	<50	**540**	<50	<50	<50	<50	<50	-	<50	<50	<50	<50	-	<50	**210**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
BTEXN																																	
Benzene	mg/kg	0.2		**75**[#2]	**3**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	0.5		**135**[#2]	**99000**[#3]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	0.5		**165**[#2]	**27000**[#3]	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenes (m & p)	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5
Xylene (o)	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5		**95**[#2]	**230**	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
Total BTEX	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	mg/kg	1		**370**	**11000**[#3]	<1	<1	<1	<1	<1		<1	<1		<1	<1	<1	<1		<1	<1	<1	<1		<1	<1	<1		<1	<1	<1	<1	<1
Heavy Metals																																	
Arsenic	mg/kg	5		**160**[#4]	**3000**	<5	<5	<5	<5	<5	<4	**6**	<5	-	<5	<5	<5	<5	-	<5	<5	<5	<5	<4	<5	<5	<5	<4	<5	**11**	**9**
Cadmium	mg/kg	1			**900**	<1	<1	<1	<1	<1	<0.4	**6**	<1	-	<1	<1	<1	<1	-	<1	<1	<1	<1	<0.4	<1	<1	<1	<0.4	<1	**2**	<1
Chromium	mg/kg	2		**540**[#5]	**3600**[#5]	**3**	<2	**48**	**7**	**7**	**7**	**20**	**7**	-	<2	<2	**15**	**22**	-	**2**	**11**	<2	<2	<1	**10**	**10**	**10**	**10**	**7**	**9**	**12**
Copper	mg/kg	5		**85**[#7]	**240000**	<5	<5	**16**	<5	<5	**5**	**28**	**40**	-	<5	<5	**32**	**5**	-	<5	**63**	<5	**11**	**1**	**27**	**38**	**32**	**40**	**27**	**76**	**78**
Lead	mg/kg	5		**1800**	**1500**	**11**	<5	**976**	**16**	**14**	**19**	**813**	**276**	-	**7**	<5	**30**	**9**	-	<5	<5	<5	**250**	**7**	**31**	**23**	**28**	**20**	**64**	**618**	**628**
Mercury	mg/kg	0.1			**730**	<0.1	<0.1	**0.1**	<0.1	<0.1	<0.1	**0.2**	**1.6**	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**0.1**	<0.1	<0.1	<0.1	<0.1	**0.1**	<0.1	**0.6**	**5.8**
Nickel	mg/kg	2		**95**[#8]	**6000**	<2	<2	**17**	**3**	**3**	**4**	**3**	**5**	-	<2	<2	**23**	<2	-	<2	**30**	<2	<2	<1	**6**	**6**	**6**	**5**	**3**	**8**	**10**
Zinc	mg/kg	5		**440**[#8]	**400000**	**10**	<5	**160**	**20**	**21**	**21**	**2100**	**227**	-	**6**	**14**	**265**	**11**	-	**8**	**36**	<5	**85**	**8**	**58**	**64**	**65**	**63**	**91**	**804**	**481**
PAHs																																	
Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2				-	-	-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	**0.3**	-	-	-	<0.2	-	-	-
Acenaphthene	mg/kg	0.5				<0.5	<0.5	**0.7**	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5
Acenaphthylene	mg/kg	0.5				<0.5	<0.5	**5.8**	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.1	**0.6**	<0.5	<0.5
Anthracene	mg/kg	0.5				<0.5	<0.5	**5.1**	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.1	**1.9**	<0.5	<0.5
Benz(a)anthracene	mg/kg	0.5				<0.5	<0.5	**6.7**	<0.5	<0.5	<0.1	**0.5**	**0.8**	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	**0.2**	**0.6**	<0.5	<0.5	**0.2**	**3**	**0.6**	<0.5
Benzo(a)pyrene	mg/kg	0.5			**1.4**	<0.5	<0.5	**5.9**	<0.5	<0.5	**0.06**	**0.6**	**0.8**	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	**0.2**	**0.6**	<0.5	<0.5	**0.1**	**2.5**	**0.8**	<0.5
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5			**40**	<0.5	<0.5	**8.8**	<0.5	<0.5	<0.5	**0.7**	**1**	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.1	**0.7**	<0.5	<0.5	<0.1	**3.3**	**0.9**	<0.5
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5			**40**	**0.6**	**0.6**	**8.8**	**0.6**	**0.6**	<0.5	**1**	**1.3**	-	**0.6**	**0.6**	**0.6**	**0.6**	-	**0.6**	**0.6**	**0.6**	**0.6**	<0.5	**1**	**0.6**	**0.6**	<0.5	**3.6**	**1.2**	**0.6**
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5			**40**	**1.2**	**1.2**	**8.8**	**1.2**	**1.2**	<0.5	**1.3**	**1.6**	-	**1.2**	**1.2**	**1.2**	**1.2**	-	**1.2**	**1.2**	**1.2**	**1.2**	<0.5	**1.3**	**1.2**	**1.2**	<0.5	**3.8**	**1.6**	**1.2**
Benzo(b)&(j)fluoranthene	mg/kg	0.5				<0.5	<0.5	**6.6**	<0.5	<0.5	-	**0.7**	**0.8**	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	**0.6**	<0.5	<0.5	-	**2.8**	**0.8**	<0.5
Benzo(g,h,i)perylene	mg/kg	0.5				<0.5	<0.5	**3.3**	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	**0.1**	<0.5	<0.5	<0.5	<0.1	**1.2**	<0.5	<0.5
Benzo(k)fluoranthene	mg/kg	0.5				<0.5	<0.5	**3**	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	**1.2**	<0.5	<0.5
Chrysene	mg/kg	0.5				<0.5	<0.5	**5.4**	<0.5	<0.5	<0.1	**0.5**	**0.7**	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	**0.2**	**0.5**	<0.5	<0.5	**0.1**	**2.6**	**0.6**	<0.5
Dibenz(a,h)anthracene	mg/kg	0.5				<0.5	<0.5	**0.9**	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5
Fluoranthene	mg/kg	0.5				<0.5	<0.5	**17.8**	<0.5	<0.5	**0.1**	**1.1**	**1.7**	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	**0.9**	**0.3**	**1.6**	<0.5	<0.5	**0.3**	**8.7**	**1.3**	**0.9**
Fluorene	mg/kg	0.5				<0.5	<0.5	**3.4**	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5				<0.5	<0.5	**2.7**	<0.5	<0.5	<0.1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.1	**1**	<0.5	<0.5
Naphthalene	mg/kg	0.5		**370**	**11000**[#3]	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5
Phenanthrene	mg/kg	0.5				<0.5	<0.5	**20**	<0.5	<0.5	<0.1	<0.5	**1**	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	**0.2**	**1.1**	<0.5	<0.5	**0.2**	**8.5**	**0.5**	**0.8**
Pyrene	mg/kg	0.5				<0.5	<0.5	**15.4**	<0.5	<0.5	**0.1**	**1.2**	**1.7**	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	**0.9**	**0.3**	**1.7**	<0.5	<0.5	**0.3**	**7.4**	**1.4**	**0.9**
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5			**4000**	<0.5	<0.5	**104**	<0.5	<0.5	**0.3**	**4.6**	**7.5**	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	**1.8**	**2.1**	**6.7**	<0.5	<0.5	**1.1**	**41.4**	**6**	**2.6**
Organochlorine Pesticides																																	
a-BHC	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Aldrin	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Dieldrin	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	**0.1**	<0.05	-	-	<0.05	<0.05	-
Aldrin & Dieldrin (Sum of total) (Lab Reported)	mg/kg	0.05			**45**	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	**0.1**	<0.05	-	-	<0.05	<0.05	-
b-BHC	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
cis-Chlordane	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
trans-Chlordane	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Chlordane (Sum of total)	mg/kg	0.05			**530**	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
d-BHC	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
DDD	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
DDE	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
DDT	mg/kg	0.2		**640**		<0.2	-	<0.2	<0.2	<0.2	<0.1	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	<0.2	-	-	<0.2	<0.2	-
DDT+DDE+DDD (Sum of total) (Lab Reported)	mg/kg	0.05			**3600**	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Endosulfan	mg/kg	0.05			**2000**	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Endosulfan I	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Endosulfan II	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Endosulfan sulphate	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Endrin	mg/kg	0.05			**100**	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Endrin aldehyde	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Endrin ketone	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
g-BHC	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Heptachlor	mg/kg	0.05			**50**	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Heptachlor epoxide	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Hexachlorobenzene	mg/kg	0.05			**80**	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Methoxychlor	mg/kg	0.2			**2500**	<0.2	-	<0.2	<0.2	<0.2	<0.1	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	<0.2	-	-	<0.2	<0.2	-
Organophosphorous Pesticides																																	
Azinphos-methyl	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Bromophos-ethyl	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Carbophenothion	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Chlorfenvinphos	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Chlorpyriphos	mg/kg	0.05			**2000**	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Chlorpyriphos-methyl	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Demeton-s-methyl	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Diazinon	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Dichlorvos	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Dimethoate	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Ethion	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Fenamiphos	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Fenitrothion	mg/kg	0.1				-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenthion	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Malathion	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Parathion-methyl	mg/kg	0.2				<0.2	-	<0.2	<0.2	<0.2	-	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	<0.2	-	-	<0.2	<0.2	-
Monocrotophos	mg/kg	0.2				<0.2	-	<0.2	<0.2	<0.2	-	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	<0.2	-	-	<0.2	<0.2	-
Parathion	mg/kg	0.2				<0.2	-	<0.2	<0.2	<0.2	<0.1	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	<0.2	-	-	<0.2	<0.2	-
Pirimphos-ethyl	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Prothiofos	mg/kg	0.05				<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-
Ronnel	mg/kg	0.1				-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Location_Code							SRT-BH413A	SRT-BH413A	SRT-BH414	SRT-BH415	SRT-BH415	SRT-BH415	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH418	SRT-BH418	SRT-BH418	SRT-BH418	SRT-BH419	SRT-BH419	SRT-BH419	SRT-BH419	SRT-BH419	SRT-BH420	SRT-BH420
Sample_Depth_Avg							1.5	3	0.4	0.5	0.5	0.5	0.25	0.5	1	1.5	3	0.5	1.5	2	3	0.2	1	1	1	0.25	1	1	1.05	0.5	1
Sampled_Date_Time							28-10-18	28-10-18	13-10-18	20-10-18	20-10-18	20-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	27-10-18	27-10-18	27-10-18	27-10-18	13-10-18	13-10-18	13-10-18	13-10-18	20-10-18	06-10-18	06-10-18
Field_ID							SRT-BH413A-1.5	SRT-BH413A-3.0	SRT-BH414_0.4	SRT-BH415-0.5	SRT-QCA106	QCB106	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT-BH418-0.2	SRT-BH418-1.0	SRT-QCA109	SRT-QCB109	SRT-BH419_0.25	SRT-BH419_1.0	SRT_QCA104	QCB104	SRT-BH419-1.05	SRT-BH420-0.5	SRT-BH420-1.0
ChemName	Units	EQL	NEPM 2013 Mgmt Limits - Commercial and industrial, Coarse Soil	SMW NEPM 2013 ESL / EIL- Commercial and industrial	SMW NEPM 2013 HSL/HIL- Commercial / Industrial D Soil																											
Phenols																																
Phenolics (Sum of total)	mg/kg	1					<1	-	<1	<1	<1	<5	-	<1	-	-	-	<1	<1	-	-	<1	-	-	-	-	<1	-	-	<1	<1	-
Polychlorinated Biphenyls																																
Aroclor 1016	mg/kg	0.1					-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1232	mg/kg	0.1					-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1242	mg/kg	0.1					-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1248	mg/kg	0.1					-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1254	mg/kg	0.1					-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1260	mg/kg	0.1					-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1221	mg/kg	0.1					-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCB (Sum of Total-Lab Reported)	mg/kg	0.1			7		<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	-	<0.1	<0.1	-	-	<0.1	-	-	-	<0.1	<0.1	-	-	<0.1	<0.1	-
Volatile Organic Compounds																																
1,4-Dichlorobenzene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
4-Chlorotoluene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
Cyclohexane	mg/kg	1					-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	-
1,2,3-Trichlorobenzene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
1,2,4-Trichlorobenzene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
1,2-Dichlorobenzene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
1,3-Dichlorobenzene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
2-Chlorotoluene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
Bromobenzene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
Chlorobenzene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
1,2,4-trimethylbenzene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
1,3,5-Trimethylbenzene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
Isopropylbenzene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
n-Butylbenzene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
n-Propylbenzene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
p-Isopropyltoluene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
sec-Butylbenzene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
Styrene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
tert-Butylbenzene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
Methyl Ethyl Ketone	mg/kg	5					<5	-	<5	<5	<5	<5	-	<5	-	-	-	<5	<5	-	-	<5	-	-	-	-	<5	<5	<5	-	<5	-	-
2-Hexanone	mg/kg	5					-	-	<5	<5	<5	<5	-	<5	-	<5	-	<5	<5	-	<5	<5	<5	-	-	-	-	<5	<5	<5	-	<5	-	-
Methyl iso-butyl ketone	mg/kg	5					-	-	<5	<5	<5	<5	-	<5	-	<5	-	<5	<5	-	<5	<5	<5	-	-	-	-	<5	<5	<5	-	<5	-	-
Vinyl acetate	mg/kg	5					-	-	<5	<5	<5	<5	-	<5	-	<5	-	<5	<5	-	<5	<5	<5	-	-	-	-	<5	<5	<5	-	<5	-	-
1,1,1,2-Tetrachloroethane	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
1,1,2,2-Tetrachloroethane	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
1,1,1-Trichloroethane	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
1,1,2-Trichloroethane	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
1,2,3-Trichloropropane	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
1,2-Dibromo-3-chloropropane	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
1,2-Dibromoethane	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
1,1-Dichloroethane	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
1,2-Dichloroethane	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
1,1-Dichloroethene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
cis-1,2-Dichloroethene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
trans-1,2-dichloroethene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
1,2-Dichloropropane	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
1,3-Dichloropropane	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
2,2-Dichloropropane	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
1,1-Dichloropropene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
cis-1,3-Dichloropropene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
trans-1,3-dichloropropene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
cis-1,4-Dichloro-2-butene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	-	<0.5	-	-
trans-1,4-Dichloro-2-butene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	-	<0.5	-	-
Bromochloromethane	mg/kg	1					-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	-
Bromodichloromethane	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
Bromoform	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
Bromomethane	mg/kg	5					-	-	<5	<5	<5	<1	<5	-	<5	-	<5	<5	<5	-	<5	<5	<5	-	-	-	-	<5	<5	<1	<5	-	-
Carbon disulfide	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	-	<0.5	-	-
Carbon tetrachloride	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
Chlorodibromomethane	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
Chloroethane	mg/kg	5					-	-	<5	<5	<5	<1	<5	-	<5	-	<5	<5	<5	-	<5	<5	<5	-	-	-	-	<5	<5	<1	<5	-	-
Chloroform	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
Chloromethane	mg/kg	5					-	-	<5	<5	<5	<1	<5	-	<5	-	<5	<5	<5	-	<5	<5	<5	-	-	-	-	<5	<5	<1	<5	-	-
Dibromomethane	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
Dichlorodifluoromethane	mg/kg	5					-	-	<5	<5	<5	<1	<5	-	<5	-	<5	<5	<5	-	<5	<5	<5	-	-	-	-	<5	<5	<1	<5	-	-
Hexachlorobutadiene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
Iodomethane	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	-	<0.5	-	-
Pentachloroethane	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	-	<0.5	-	-
Trichloroethene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
Tetrachloroethene	mg/kg	0.5					-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<1	<0.5	-	-
Trichlorofluoromethane	mg/kg	5					-	-	<5	<5	<5	<1	<5	-	<5	-	<5	<5	<5	-	<5	<5	<5	-	-	-	-	<5	<5	<1	<5	-	-
Vinyl chloride	mg/kg	5					-	-	<5	<5	<5	<1	<5	-	<5	-	<5	<5	<5	-	<5	<5	<5	-	-	-	-	<5	<5	<1	<5	-	-
Perfluorinated Compounds																																
10:2 Fluorotelomer sulfonic acid	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:2 Fluorotelomer sulfonic acid	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8:2 Fluorotelomer sulfonate	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Et-FOSA	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Et-FOSE	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Me-FOSA	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Me-FOSE	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid (PFBA)	mg/kg	0.001					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonic acid	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-pentanoic acid (PFPeA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentane sulfonic acid	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PFDoS	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum of PFHxS and PFOS (lab reported)	mg/kg	0.0002			20[#1]		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum of WA DER PFAS (n=10)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum of PFASs (n=28)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanesulfonic acid (PFBS)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002		0.14[#1]			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanoate (PFOA)	mg/kg	0.0002			50[#1]		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanesulfonic acid (PFHxS)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorononanoic acid (PFNA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonamide (PFOSA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Env Stds Comments
#1:PFAS National Environmental Management Plan (NEMP), Criteria for commercial / industrial land use
#2:Most conservative of the ESLs for coarse or fine grained soils adopted
#3:CRC Care (2011) Direct contact criteria, commercial / industrial landuse
#4:Aged Arsenic (present in soil for > 2 years)
#5:EIL calculated using site specific soil qualities, EIL value for CrIII
#6:HIL value for CrVI
#7:EIL based on lower limit for aged contamination present in schedule B5a of the NEPM (NECP 2013)
#8:EIL calculated using site specific soil qualities

AD: Asbestos detected
NAD: No asbestos detected
NFD: No fibres detected
* No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.

ChemName	Units	EQL	NEPM 2013 Mgmt Limits - Commercial and industrial, Coarse Soil	SMW NEPM 2013 ESL / EIL-Commercial and industrial	SMW NEPM 2013 HSL/HIL-Commercial / Industrial D Soil	Location_Code	SRT-BH420	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH423	SRT-BH423	SRT-BH423	SRT-BH424	SRT-BH424	SRT-BH424	SRT-BH424	SRT-BH424	SRT-BH425	SRT-BH425	SRT-BH425	SRT-BH425	SRT-BH425	SRT-BH426	SRT-BH426	SRT-BH426	SRT-BH426	SRT-BH426
						Sample_Depth_Avg	2	0.25	0.5	0.5	0.5	1	3	0.5	1	1	1	1.5	0.5	2	4.15	0.5	0.5	0.5	1	3	0.15	0.4	0.5	1	2	0.1	0.5	1	2	4
						Sampled_Date_Time	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	07-10-18	06-10-18	10-07-18	07-10-18	13-10-18	13-10-18	13-10-18	13-10-18	27-10-18	27-10-18	27-10-18	27-10-18	27-10-18	13-10-18	27-10-18	27-10-18	27-10-18	27-10-18	27-10-18	07-10-18	07-10-18	07-10-18	07-10-18	07-10-18
						Field_ID	SRT-BH420-2.0	SRT_BH421_0.25	SRT_BH421_0.5	QCA102	QCB102	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0	QCA103	QCB103	SRT_BH422_1.5	SRT-BH423_0.5	SRT-BH423_2.0	SRT_BH423_4.15	SRT-BH424-0.5	SRT-QCA108	SRT-QCB108	SRT-BH424-1.0	SRT-BH424-3.0	SRT_BH425_0.15	SRT-BH425-0.4	SRT-BH425-0.5	SRT-BH425-1.0	SRT-BH425-2.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0	SRT_BH426_2.0	SRT_BH426_4.0
Asbestos																																				
Asbestos in soil (>7mm ACM)	%w/w	0.01			**0.05**		-	<0.01	-	-	-	-	-	<0.01	-	-	-	-	<0.01	-	-	<0.01	-	-	-	-	<0.01	-	<0.01	-	-	<0.01	-	-	-	-
Asbestos in soil (<7mm AF/FA)	%w/w	0.001			**0.001**		-	<0.001	-	-	-	-	-	<0.001	-	-	-	-	<0.001	-	-	<0.001	-	-	-	-	<0.001	-	<0.001	-	-	<0.001	-	-	-	-
Weight Asbestos in soil (>7mm ACM)	g	0.1					-	<0.1	-	-	-	-	-	<0.1	-	-	-	-	<0.1	-	-	<0.1	-	-	-	-	<0.1	-	<0.1	-	-	<0.1	-	-	-	-
Weight Asbestos in soil (<7mm AF/FA)	g	0.0004					-	<0.0004	-	-	-	-	-	<0.0004	-	-	-	-	<0.0004	-	-	<0.0004	-	-	-	-	<0.0004	-	<0.0004	-	-	<0.0004	-	-	-	-
Asbestos Type	No						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos Detected	No	0.1			**NAD**		-	NAD	-	-	-	-	-	NAD	-	-	-	-	NAD	-	-	NAD	-	-	-	-	NAD	-	NAD	-	-	NAD	-	-	-	-
Asbestos Fibres Detected	Fibres	5					-	NFD	-	-	-	-	-	NFD	-	-	-	-	NFD	-	-	NFD	-	-	-	-	NFD	-	NFD	-	-	NFD	-	-	-	-
Fibrous Asbestos >7mm	mg/kg	0.0004					-	<0.0004	-	-	-	-	-	<0.0004	-	-	-	-	<0.0004	-	-	<0.0004	-	-	-	-	<0.0004	-	<0.0004	-	-	<0.0004	-	-	-	-
Mass of test sample	g	0.1					-	658	-	-	-	-	-	577	-	-	-	-	287	-	-	706	-	-	-	-	598	-	311	-	-	452	-	-	-	-
Sample weight (dry)	g	0.01					-	658	-	-	-	-	-	577	-	-	-	-	287	-	-	706	-	-	-	-	598	-	311	-	-	452	-	-	-	-
Moisture																																				
Moisture	%	0.1					5.4	18.4	12.1	10.6	2.1	9.7	4.2	14	10.8	8.5	5.3	13.4	14.2	3.6	21.2	10.3	11	12	12.3	3.1	14.4	11.6	-	4.5	3.6	8.4	9	12.6	6.1	16.5
TRHs																																				
TRH C6 - C10 Fraction F1	mg/kg	10	**700**				<10	-	<10	<10	<25	<10	<10	<10	<10	<10	<25	<10	<10	<10	<10	<10	<10	<25	<10	<10	<10	18	-	<10	<10	<10	-	<10	<10	<10
TRH C6 - C10 Fraction Less BTEX F1	mg/kg	10		**215**[#2]	**260**		<10	-	<10	<10	<25	<10	<10	<10	<10	<10	<25	<10	<10	<10	<10	<10	<10	<25	<10	<10	<10	11	-	<10	<10	<10	-	<10	<10	<10
TRH >C10 - C16 Fraction F2	mg/kg	50	**1000**	**170**[#2]			<50	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	**2140**	-	<50	<50	<50	-	<50	<50	<50
TRH >C10 - C16 Fraction Less Naphthalene (F2)	mg/kg	50			**20000**[#3]		<50	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	2090	-	<50	<50	<50	-	<50	<50	<50
TRH >C16 - C34 Fraction F3	mg/kg	100	**3500**	**1700**[#2]	**27000**[#3]		<100	-	260	250	270	<100	<100	160	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	1070	**23,600**	-	<100	<100	<100	-	<100	<100	<100
TRH >C34 - C40 Fraction F4	mg/kg	100	**10000**	**3300**[#2]	**38000**[#3]		<100	-	240	240	190	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	300	**4620**	-	<100	<100	<100	-	<100	<100	<100
TRH+C10 - C40 (Sum of total) (Lab Reported)	mg/kg	50					<50	-	500	490	470	<50	<50	160	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	1370	30,400	-	<50	<50	<50	-	<50	<50	<50
BTEXN																																				
Benzene	mg/kg	0.2		**75**[#2]	**3**		<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	1.8	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Toluene	mg/kg	0.5		**135**[#2]	**99000**[#3]		<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.8	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	0.5		**165**[#2]	**27000**[#3]		<0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Xylenes (m & p)	mg/kg	0.5					<0.5	-	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	1.8	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Xylene (o)	mg/kg	0.5					<0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5		**95**[#2]	**230**		<0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	2.3	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Total BTEX	mg/kg	0.2					<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	6.9	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Naphthalene	mg/kg	1		**370**	**11000**[#3]		<1		<1	<1		<1	<1	<1	<1	<1		<1	<1	<1	<1	<1	<1		<1	<1	<1	1	49	-	3	<1	<1	-	<1	<1	<1
Heavy Metals																																				
Arsenic	mg/kg	5		**160**[#4]	**3000**		<5	-	<5	<5	<4	<5	<5	<5	<5	<5	<4	<5	9	<5	<5	<5	<5	<5	<4	<5	<5	5	<5	-	<5	<5	<5	-	<5	<5	<5
Cadmium	mg/kg	1			**900**		<1	-	<1	<1	<0.4	<1	<1	<1	<1	<1	<0.4	<1	<1	<1	<1	<1	<1	<0.4	<1	<1	<1	1	<1	-	<1	<1	<1	-	<1	<1	<1
Chromium	mg/kg	5		**540**[#5]	**3600**[#6]		<2	-	12	9	10	3	<2	3	<2	<2	<2	13	<2	<2	<2	3	3	4	4	<2	8	4	-	2	<2	5	-	5	<2	<2
Copper	mg/kg	5		**85**[#7]	**240000**		<5	-	20	19	28	<5	<5	30	<5	<5	1	5	58	<5	<5	10	11	39	22	<5	**128**	**85**	-	33	<5	21	-	37	<5	<5
Lead	mg/kg	5		**1800**	**1500**		15	-	22	23	16	<5	<5	261	31	<5	7	29	250	7	<5	186	167	150	104	<5	1100	345	-	123	<5	142	-	246	<5	<5
Mercury	mg/kg	0.1			**730**		<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	0.2	0.2	0.3	0.1	<0.1	1.1	1	-	0.2	<0.1	0.2	-	0.8	<0.1	<0.1
Nickel	mg/kg	2		**95**[#8]	**6000**		<2	-	10	6	8	<2	<2	3	<2	<2	<1	<2	8	<2	<2	<2	<2	<2	3	5	<2	7	-	2	<2	2	-	3	<2	<2
Zinc	mg/kg	5		**440**[#8]	**400000**		17	-	48	53	36	<5	18	150	47	13	12	108	**500**	<5	6	75	66	51	67	8	**566**	150	-	79	<5	122	-	171	10	6
PAHs																																				
Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2					-	-	-	-	1	-	-	-	-	-	<0.2	-	-	-	-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/kg	0.5					<0.5	-	<0.5	<0.5	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	0.6	32.4	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Acenaphthylene	mg/kg	0.5					<0.5	-	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	6.3	142	-	0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Anthracene	mg/kg	0.5					<0.5	-	<0.5	0.6	0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	9.2	228	-	0.7	<0.5	<0.5	-	<0.5	<0.5	<0.5
Benz(a)anthracene	mg/kg	0.5					<0.5	-	0.8	1	0.9	<0.5	<0.5	1.4	<0.5	0.6	<0.1	0.9	1.7	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	20.7	374	-	0.9	<0.5	<0.5	-	2.0	<0.5	<0.5
Benzo(a)pyrene	mg/kg	0.5		**1.4**			<0.5	-	0.8	1	0.85	<0.5	<0.5	1.4	<0.5	0.6	0.06	0.9	2.6	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	**19**	**320**	-	0.9	<0.5	<0.5	-	0.9	<0.5	<0.5
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5			**40**		<0.5	-	1	1.2	1.1	<0.5	<0.5	1.8	<0.5	0.7	<0.5	1.1	2.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	27.8	**472**	-	1	<0.5	<0.5	-	1.1	<0.5	<0.5
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5			**40**		0.6	-	1.3	1.5	1.2	0.6	0.6	2	0.6	1	<0.5	1.4	2.8	0.6	0.6	0.6	0.6	<0.5	0.6	0.6	27.8	**472**	-	1.4	0.6	0.6	-	1.4	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5			**40**		**1.2**	-	1.6	1.8	1.2	**1.2**	**1.2**	**2.3**	**1.2**	**1.3**	<0.5	**1.7**	**3.1**	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**	<0.5	**1.2**	**1.2**	27.8	**472**	-	**1.7**	**1.2**	**1.2**	-	**1.7**	**1.2**	**1.2**
Benzo(b)&(j)fluoranthene	mg/kg	0.5					<0.5	-	0.8	1	-	<0.5	<0.5	1.4	<0.5	0.6	-	0.8	2.1	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	21	378	-	0.6	<0.5	<0.5	-	1	<0.5	<0.5
Benzo(g,h,i)perylene	mg/kg	0.5					<0.5	-	<0.5	<0.5	0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.1	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	9.2	134	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	mg/kg	0.5					<0.5	-	<0.5	<0.5	-	<0.5	<0.5	0.6	<0.5	<0.5	-	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	9.2	150	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Chrysene	mg/kg	0.5					<0.5	-	0.8	1	0.9	<0.5	<0.5	1.2	<0.5	0.5	<0.1	0.8	1.7	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	17.5	323	-	0.8	<0.5	<0.5	-	0.8	<0.5	<0.5
Dibenz(a,h)anthracene	mg/kg	0.5					<0.5	-	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	2.6	44.8	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Fluoranthene	mg/kg	0.5					<0.5	-	2.2	2.6	2.1	<0.5	<0.5	3.3	0.8	1.3	0.1	2.1	3.8	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	47.3	860	-	2.8	<0.5	0.7	-	2.2	<0.5	<0.5
Fluorene	mg/kg	0.5					<0.5	-	<0.5	<0.5	0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	2.9	154	-	0.6	<0.5	<0.5	-	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5					<0.5	-	<0.5	<0.5	0.4	<0.5	<0.5	0.5	<0.5	<0.5	<0.1	<0.5	0.9	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	8.1	128	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Naphthalene	mg/kg	0.5		**370**	**11000**[#3]		<0.5	-	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	1.6	111	-	0.9 - 3	<0.5	<0.5	-	<0.5	<0.5	<0.5
Phenanthrene	mg/kg	0.5					<0.5	-	2.3	2.7	2	<0.5	<0.5	3.2	0.8	1.4	0.1	2	4	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	29.5	777	-	2.4	<0.5	0.7	-	2.1	<0.5	<0.5
Pyrene	mg/kg	0.5					<0.5	-	2.3	2.7	2	<0.5	<0.5	3.2	0.8	1.4	0.1	2	4	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	42	764	-	2.4	<0.5	0.7	-	2.1	<0.5	<0.5
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5			**4000**		<0.5	-	9.5	11.9	11	<0.5	<0.5	15.4	1.6	5.6	0.3	8.4	20	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	247	4920	-	14	<0.5	1.4	-	9	<0.5	<0.5
Organochlorine Pesticides																																				
a-BHC	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Aldrin	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Dieldrin	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Aldrin & Dieldrin (Sum of total) (Lab Reported)	mg/kg	0.05			**45**		-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	-	-	-	<0.8	-	-	-	-	<0.05	-	-	-	-
b-BHC	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
cis-Chlordane	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
trans-Chlordane	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Chlordane (Sum of total)	mg/kg	0.05			**530**		-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	-	-	-	<0.8	-	-	-	-	<0.05	-	-	-	-
d-BHC	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
DDD	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
DDE	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
DDT	mg/kg	0.2		**640**			-	<0.2	-	-	-	-	-	<0.2	-	-	-	-	<0.2	-	-	<0.2	-	<0.1	-	-	-	<10	-	-	-	-	<0.2	-	-	-	-
DDT+DDE+DDD (Sum of total) (Lab Reported)	mg/kg	0.05			**3600**		-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<0.8	-	-	-	-	<0.05	-	-	-	-
Endosulfan	mg/kg	0.05			**2000**		-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	-	-	-	<1.5	-	-	-	-	<0.05	-	-	-	-
Endosulfan I	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Endosulfan II	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Endosulfan sulphate	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Endrin	mg/kg	0.05			**100**		-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Endrin aldehyde	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Endrin ketone	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
g-BHC	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Heptachlor	mg/kg	0.05			**50**		-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Heptachlor epoxide	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Hexachlorobenzene	mg/kg	0.05			**80**		-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Methoxychlor	mg/kg	0.2			**2500**		-	<0.2	-	-	-	-	-	<0.2	-	-	-	-	<0.2	-	-	<0.2	-	<0.1	-	-	-	<10	-	-	-	-	<0.2	-	-	-	-
Organophosphorous Pesticides																																				
Azinphos-methyl	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Bromophos-ethyl	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Carbophenothion	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Chlorfenvinphos	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Chlorpyriphos	mg/kg	0.05			**2000**		-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Chlorpyriphos-methyl	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Demeton-s-methyl	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Diazinon	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Dichlorvos	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Dimethoate	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Ethion	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Fenamiphos	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Fenitrothion	mg/kg	0.1					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenthion	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	-	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Malathion	mg/kg	0.05					-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-	-
Parathion-methyl	mg/kg	0.2					-	<0.2	-	-	-	-	-	<0.2	-	-	-	-	<0.2	-	-	<0.2	-	-	-	-	-	<10	-	-	-	-	<0.2	-	-	-	-
Monocrotophos	mg/kg	0.2					-	<0.2	-	-	-	-	-	<0.2	-	-	-	-	<0.2	-	-	<0.2	-	-	-	-	-	<10	-	-	-	-	<0.2	-	-	-	-
Parathion	mg/kg	0.2					-	<0.2	-	-	-	-	-	<0.2	-	-	-	-	<0.2	-	-	<0.2	-	<0.1	-	-	-	<10	-	-	-	-	<0.2	-	-	-	-
Pirimphos-ethyl	mg/kg	0.05					-	<0.05	-	-	-	-	-

ChemName	Units	EQL	NEPM 2013 Mgmt Limits - Commercial and industrial, Coarse Soil	SMW NEPM 2013 ESL / EIL- Commercial and industrial	SMW NEPM 2013 HSL/HIL- Commercial / Industrial D Soil	Location_Code	SRT-BH420	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH423	SRT-BH423	SRT-BH423	SRT-BH424	SRT-BH424	SRT-BH424	SRT-BH424	SRT-BH424	SRT-BH425	SRT-BH425	SRT-BH425	SRT-BH425	SRT-BH425	SRT-BH426	SRT-BH426	SRT-BH426	SRT-BH426	SRT-BH426
						Sample_Depth_Avg	2	0.25	0.5	0.5	0.5	1	3	0.5	1	1	1	1.5	0.5	2	4.15	0.5	0.5	0.5	1	3	0.15	0.4	0.5	1	2	0.1	0.5	1	2	4
						Sampled_Date_Time	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	07-10-18	07-10-18	06-10-18	10-07-18	07-10-18	13-10-18	13-10-18	13-10-18	27-10-18	27-10-18	27-10-18	27-10-18	27-10-18	13-10-18	27-10-18	27-10-18	27-10-18	27-10-18	27-10-18	07-10-18	07-10-18	07-10-18	07-10-18	07-10-18
						Field_ID	SRT-BH420-2.0	SRT_BH421_0.25	SRT_BH421_0.5	QCA102	QCB102	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0	QCA103	QCB103	SRT_BH422_1.5	SRT-BH423_0.5	SRT-BH423_2.0	SRT_BH423_4.15	SRT-BH424-0.5	SRT-QCA108	SRT-QCB108	SRT-BH424-1.0	SRT-BH424-3.0	SRT_BH425_0.15	SRT-BH425-0.4	SRT-BH425-0.5	SRT-BH425-1.0	SRT-BH425-2.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0	SRT_BH426_2.0	SRT_BH426_4.0
Phenols																																					
Phenolics (Sum of total)	mg/kg	1					-	-	-	-	-	-	-	<1	-	-	-	-	<1	-	-	<1	-	-	<5	-	-	-	6	-	-	-	-	<1	<1	-	-
Polychlorinated Biphenyls																																					
Aroclor 1016	mg/kg	0.1					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1232	mg/kg	0.1					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1242	mg/kg	0.1					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1248	mg/kg	0.1					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1254	mg/kg	0.1					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1260	mg/kg	0.1					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1221	mg/kg	0.1					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
PCB (Sum of Total-Lab Reported)	mg/kg	0.1			7		-	-	-	-	-	-	-	<0.1	-	-	-	-	<0.1	-	-	<0.1	-	-	<0.1	-	-	-	<0.2	-	-	-	-	<0.1	<0.1	-	-
Volatile Organic Compounds																																					
1,4-Dichlorobenzene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
4-Chlorotoluene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Cyclohexane	mg/kg	1					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichlorobenzene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,2,4-Trichlorobenzene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,2-Dichlorobenzene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,3-Dichlorobenzene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
2-Chlorotoluene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Bromobenzene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Chlorobenzene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,2,4-trimethylbenzene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,3,5-Trimethylbenzene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Isopropylbenzene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
n-Butylbenzene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
n-Propylbenzene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
p-Isopropyltoluene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
sec-Butylbenzene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Styrene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
tert-Butylbenzene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Methyl Ethyl Ketone	mg/kg	5					-	-	-	-	-	-	-	-	-	-	-	-	<5	-	<5	<5	-	-	-	-	-	-	-	<5	-	<5	-	<5	-	-
2-Hexanone	mg/kg	5					-	-	-	-	-	-	-	-	-	-	-	-	<5	-	<5	<5	-	-	-	-	-	-	-	<5	-	<5	-	<5	-	-
Methyl iso-butyl ketone	mg/kg	5					-	-	-	-	-	-	-	-	-	-	-	-	<5	-	<5	<5	-	-	-	-	-	-	-	<5	-	<5	-	<5	-	-
Vinyl acetate	mg/kg	5					-	-	-	-	-	-	-	-	-	-	-	-	<5	-	<5	<5	-	-	-	-	-	-	-	<5	-	<5	-	<5	-	-
1,1,1,2-Tetrachloroethane	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,1,2,2-Tetrachloroethane	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,1,1-Trichloroethane	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,1,2-Trichloroethane	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,2,3-Trichloropropane	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,2-Dibromo-3-chloropropane	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,2-Dibromoethane	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,1-Dichloroethane	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,2-Dichloroethane	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,1-Dichloroethene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
cis-1,2-Dichloroethene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
trans-1,2-dichloroethene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,2-Dichloropropane	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,3-Dichloropropane	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
2,2-Dichloropropane	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,1-Dichloropropene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
cis-1,3-Dichloropropene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
trans-1,3-dichloropropene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
cis-1,4-Dichloro-2-butene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
trans-1,4-Dichloro-2-butene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Bromochloromethane	mg/kg	1					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Bromoform	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Bromomethane	mg/kg	5					-	-	-	-	-	-	-	-	-	-	-	-	<5	-	<5	<5	-	<1	-	-	-	-	-	<5	-	<5	-	<5	-	-
Carbon disulfide	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	*	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Carbon tetrachloride	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Chlorodibromomethane	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Chloroethane	mg/kg	5					-	-	-	-	-	-	-	-	-	-	-	-	<5	-	<5	<5	-	<1	-	-	-	-	-	<5	-	<5	-	<5	-	-
Chloroform	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Chloromethane	mg/kg	5					-	-	-	-	-	-	-	-	-	-	-	-	<5	-	<5	<5	-	<1	-	-	-	-	-	<5	-	<5	-	<5	-	-
Dibromomethane	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Dichlorodifluoromethane	mg/kg	5					-	-	-	-	-	-	-	-	-	-	-	-	<5	-	<5	<5	-	<1	-	-	-	-	-	<5	-	<5	-	<5	-	-
Hexachlorobutadiene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Iodomethane	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Pentachloroethane	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Trichloroethene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Tetrachloroethene	mg/kg	0.5					-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Trichlorofluoromethane	mg/kg	5					-	-	-	-	-	-	-	-	-	-	-	-	<5	-	<5	<5	-	<1	-	-	-	-	-	<5	-	<5	-	<5	-	-
Vinyl chloride	mg/kg	5					-	-	-	-	-	-	-	-	-	-	-	-	<5	-	<5	<5	-	<1	-	-	-	-	-	<5	-	<5	-	<5	-	-
Perfluorinated Compounds																																					
10:2 Fluorotelomer sulfonic acid	mg/kg	0.0005					-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-
4:2 Fluorotelomer sulfonic acid	mg/kg	0.0005					-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-
8:2 Fluorotelomer sulfonate	mg/kg	0.0005					-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-
N-Et-FOSA	mg/kg	0.0005					-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-
N-Et-FOSE	mg/kg	0.0005					-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-
N-Me-FOSA	mg/kg	0.0005					-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-
N-Me-FOSE	mg/kg	0.0005					-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid (PFBA)	mg/kg	0.001					-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonic acid	mg/kg	0.0002					-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-pentanoic acid (PFPeA)	mg/kg	0.0002					-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentane sulfonic acid	mg/kg	0.0002					-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
PFDoS	mg/kg	0.0002					-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002					-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Sum of PFHxS and PFOS (lab reported)	mg/kg	0.0002			20[#1]		-	-	-	-	-	-	-	0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Sum of WA DER PFAS (n=10)	mg/kg	0.0002					-	-	-	-	-	-	-	0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Sum of PFASs (n=28)	mg/kg	0.0002					-	-	-	-	-	-	-	0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanesulfonic acid (PFBS)	mg/kg	0.0002					-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002					-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0002					-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002					-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002		0.14[#1]			-	-	-	-	-	-	-	0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanoate (PFOA)	mg/kg	0.0002			50[#1]		-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanesulfonic acid (PFHxS)	mg/kg	0.0002					-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluorononanoic acid (PFNA)	mg/kg	0.0002					-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002					-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005					-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002					-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonamide (PFOSA)	mg/kg	0.0002					-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005					-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002					-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0002					-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-

Env Stds Comments
#1:PFAS National Environmental Management Plan (NEMP), Criteria for commercial / industrial land use
#2:Most conservative of the ESLs for coarse or fine grained soils adopted
#3:CRC Care (2011) Direct contact criteria, commercial / industrial landuse
#4:Aged Arsenic (present in soil for > 2 years)
#5:EIL calculated using site specific soil qualities, EIL value for CrIII
#6:HIL value for CrVI
#7:EIL based on lower limit for aged contamination present in schedule B5a of the NEPM (NECP 2013)
#8:EIL calculated using site specific soil qualities

AD: Asbestos detected
NAD: No asbestos detected
NFD: No fibres detected
* No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.

									Location_Code	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH410	SRT-BH410	SRT-BH410	SRT-BH411	SRT-BH411	SRT-BH411	SRT-BH411	SRT-BH412	SRT-BH412
									Sample_Depth_Avg	0.2	0.5	1.5	2	3	0.5	0.5	0.5	1.5	2	3	0.2	0.8	1.5	0.15	0.5	1	2	0.11	0.5
									Sampled_Date_Time	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	10-06-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18
									Field_ID	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0	SRT_BH408_3.0	SRT_BH409_0.5	QCA101	QCB101	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH411_0.15	SRT_BH411_0.5	SRT_BH411_1.0	SRT_BH411_2.0	SRT_BH412_0.11	SRT_BH412_0.5
			NSW HIL - Residential - Minimal Access to Soil (Residential B)	NEPM 2013 Mgmt Limits - Residential and public open space, Coarse Soil	NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand				Ecological Criteria (EILs and ESLs)																				
					0-1m	1-2m	2-4m	>4m																					
ChemName	**Units**	**EQL**																											
Asbestos																													
Asbestos in soil (>7mm ACM)	%w/w	0.01	**0.04**							<0.01	-	-	-	-	<0.01	<0.01	-	-	-	-	<0.01	-	-	<0.01	-	-	-	-	<0.01
Asbestos in soil (<7mm AF/FA)	%w/w	0.001	**0.001**							<0.001	-	-	-	-	<0.001	<0.001	-	-	-	-	<0.001	-	-	<0.001	-	-	-	-	<0.001
Weight Asbestos in soil (>7mm ACM)	g	0.1								<0.1	-	-	-	-	<0.1	<0.1	-	-	-	-	<0.1	-	-	<0.1	-	-	-	-	<0.1
Weight Asbestos in soil (<7mm AF/FA)	g	0.0004								<0.0004	-	-	-	-	<0.0004	<0.0004	-	-	-	-	<0.0004	-	-	<0.0004	-	-	-	-	<0.0004
Asbestos (1-Detect or <1-Non-Detect)	No	0.1	**NAD**							NAD	-	-	-	-	NAD	NAD	NAD	-	-	-	NAD	-	-	NAD	-	-	-	-	NAD
Asbestos Fines	mg/kg	5								NFD	-	-	-	-	NFD	NFD	NFD	-	-	-	NFD	-	-	NFD	-	-	-	-	NFD
Fibrous Asbestos	mg/kg	0.0004								<0.0004	-	-	-	-	<0.0004	<0.0004	-	-	-	-	<0.0004	-	-	<0.0004	-	-	-	-	<0.0004
Mass of test sample	g	0.1								488	-	-	-	-	394	35.7	25	-	-	-	541	-	-	756	-	-	-	-	618
Sample weight (dry)	g	0.01								488	-	-	-	-	394	35.7	25	-	-	-	541	-	-	756	-	-	-	-	618
Moisture																													
Moisture	%	0.1								9.7	2.2	4.2	4.8	3.3	4.4	3	3.3	4.8	4.2	31.1	8.7	5.6	6.8	-	6.7	4	3.3	10.8	10.9
TRHs																													
TRH C6 - C10 Fraction F1	mg/kg	10		**700**					**180** [#4]	<10	<10	-	<10	-	<10	<10	<25	<10	-	<10	<10	<10	<10	-	<10	<10	<10	-	<10
TRH C6 - C10 Fraction Less BTEX F1	mg/kg	10	**5600** [#1]		**45**	**70**	**110**	**200**		<10	<10	-	<10	-	<10	<10	<25	<10	-	<10	<10	<10	<10	-	<10	<10	<10	-	<10
TRH >C10 - C16 Fraction F2	mg/kg	50		**1000**					**120** [#4]	<50	<50	-	<50	-	<50	<50	<50	<50	-	<50	<50	<50	<50	-	<50	<50	<50	-	<50
TRH >C10 - C16 Fraction Less Naphthalene (F2)	mg/kg	50	**4200** [#1]		**110**	**240**	**440**	**NL** [#3]		<50	<50	-	<50	-	<50	<50	<50	<50	-	<50	<50	<50	<50	-	<50	<50	<50	-	<50
TRH >C16 - C34 Fraction F3	mg/kg	100	**5800** [#1]	**2500**					**300** [#4]	<100	<100	-	<100	-	<100	<100	<100	<100	-	<100	<100	<100	<100	-	<100	<100	<100	-	240
TRH >C34 - C40 Fraction F4	mg/kg	100	**8100** [#1]	**10000**					**2800** [#4]	<100	<100	-	<100	-	<100	<100	<100	<100	-	<100	<100	<100	<100	-	<100	<100	<100	-	160
TRH+C10 - C40 (Sum of total) (Lab Reported)	mg/kg	50								<50	<50	-	<50	-	<50	<50	<50	<50	-	<50	<50	<50	<50	-	<50	<50	<50	-	400
BTEXN																													
Benzene	mg/kg	0.2	**140** [#1]		**0.5**	**0.5**	**0.5**	**0.5**	**50** [#4]	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2
Toluene	mg/kg	0.5	**21000** [#1]		**160**	**220**	**310**	**540**	**85** [#4]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5
Ethylbenzene	mg/kg	0.5	**5900** [#1]		**55**	**NL** [#3]	**NL** [#3]	**NL** [#3]	**70** [#4]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5
Xylenes (m & p)	mg/kg	0.5							**45** [#5]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5
Xylene (o)	mg/kg	0.5								<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5	**17000** [#1]		**40**	**60**	**95**	**170**		<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5
Total BTEX	mg/kg	0.2								<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2
Naphthalene	mg/kg		**2200** [#1]		**3**	**NL** [#3]	**NL** [#3]	**NL** [#3]	**170** [#6]	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1
Heavy Metals																													
Arsenic	mg/kg	5	**500**						**100** [#7]	<5	<5	-	<5	-	<5	<5	<4	<5	-	<5	<5	<5	<5	-	<5	<5	<5	-	<5
Cadmium	mg/kg	1	**150**							<1	<1	-	<1	-	<1	<1	<0.4	<1	-	<1	<1	<1	<1	-	<1	<1	<1	-	<1
Chromium	mg/kg	2	**500**						**330** [#7]	<2	<2	-	<2	-	<2	<2	<1	<2	-	<2	4	3	3	-	3	<2	<2	-	11
Copper	mg/kg	5	**30,000**						**60** [#8]	6	<5	-	<5	-	<5	<5	4	<5	-	<5	6	<5	<5	-	27	<5	<5	-	21
Lead	mg/kg	5	**1200**						**1100** [#9]	55	<5	-	<5	-	<5	<5	8	<5	-	<5	20	<5	<5	-	95	<5	<5	-	28
Mercury	mg/kg	0.1	**120**							<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	0.3	<0.1	<0.1	-	<0.1
Nickel	mg/kg	2	**1200**						**55** [#7]	<2	<2	-	<2	-	<2	<2	<1	<2	-	<2	2	<2	<2	-	2	<2	<2	-	7
Zinc	mg/kg	5	**60,000**						**330** [#7]	73	<5	-	<5	-	<5	5	16	6	-	<5	92	<5	<5	-	108	<5	<5	-	54
PAHs																													
Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2								-	-	-	-	-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/kg	0.5								<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5
Acenaphthylene	mg/kg	0.5								<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5
Anthracene	mg/kg	0.5								<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	0.8
Benz(a)anthracene	mg/kg	0.5								<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	1.2
Benzo(a)pyrene	mg/kg	0.5							**0.7** [#6]	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	**1.2**
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5	**4**							<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	1.4
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5	**4**							0.6	0.6	-	0.6	-	0.6	0.6	<0.5	0.6	-	0.6	0.6	0.6	0.6	-	0.6	0.6	0.6	-	1.8
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5	**4**							1.2	1.2	-	1.2	-	1.2	1.2	<0.5	1.2	-	1.2	1.2	1.2	1.2	-	1.2	1.2	1.2	-	2
Benzo(b)&(j)fluoranthene	mg/kg	0.5								<0.5	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	1.2
Benzo(g,h,i)perylene	mg/kg	0.5								<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	0.6
Benzo(k)fluoranthene	mg/kg	0.5								<0.5	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5
Chrysene	mg/kg	0.5								<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	1.2
Dibenz(a,h)anthracene	mg/kg	0.5								<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5
Fluoranthene	mg/kg	0.5								<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	0.5	<0.5	<0.5	-	3.4
Fluorene	mg/kg	0.5								<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5								<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5
Naphthalene	mg/kg	0.5			**3**	**NL** [#4]	**NL** [#4]	**NL** [#4]	**170** [#6]	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5
Phenanthrene	mg/kg	0.5								<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	2.8
Pyrene	mg/kg	0.5								<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	0.5	<0.5	<0.5	-	3.6
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5	**400**							<0.5	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	1	<0.5	<0.5	-	16
Organochlorine Pesticides																													
a-BHC	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Aldrin	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Dieldrin	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	0.12	-	-	<0.05	-	-
Aldrin & Dieldrin (Sum of total) (Lab Reported)	mg/kg	0.05	**10**							-	<0.05	-	-	-	<0.05	<0.05	-	-	-	-	-	<0.05	-	0.12	-	-	<0.05	-	-
b-BHC	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
cis-Chlordane	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
trans-Chlordane	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Chlordane (Sum of total)	mg/kg	0.05	**90**							-	<0.05	-	-	-	<0.05	<0.05	-	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
d-BHC	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
DDD	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
DDE	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
DDT	mg/kg	0.2							**180** [#6]	-	<0.2	-	-	-	<0.2	<0.2	<0.1	-	-	-	-	<0.2	-	<0.2	-	-	<0.2	-	-
DDT+DDE+DDD (Sum of total) (Lab Reported)	mg/kg	0.05	**600**							-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Endosulfan	mg/kg	0.05	**400**							-	<0.05	-	-	-	<0.05	<0.05	-	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Endosulfan I	mg/kg	0.05	**400**							-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Endosulfan II	mg/kg	0.05	**400**							-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Endosulfan sulphate	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Endrin	mg/kg	0.05	**20**							-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Endrin aldehyde	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Endrin ketone	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	-	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
g-BHC	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Heptachlor	mg/kg	0.05	**10**							-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Heptachlor epoxide	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Hexachlorobenzene	mg/kg	0.05	**15**							-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Methoxychlor	mg/kg	0.2	**500**							-	<0.2	-	-	-	<0.2	<0.2	<0.1	-	-	-	-	<0.2	-	<0.2	-	-	<0.2	-	-
Organophosphorous Pesticides																													
Azinphos-methyl	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Bromophos-ethyl	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Carbophenothion	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	-	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Chlorfenvinphos	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	-	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Chlorpyriphos	mg/kg	0.05	**340**							-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Chlorpyriphos-methyl	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Demeton-s-methyl	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	-	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Diazinon	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Dichlorvos	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Dimethoate	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-
Ethion	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	<0.05	-	-	<0.05	-	-

ChemName	Units	EQL	NSW HIL - Residential - Minimal Access to Soil (Residential B)	NEPM 2013 Mgmt Limits - Residential and public open space, Coarse Soil	NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand: 0-1m	1-2m	2-4m	>4m	Ecological Criteria (EILs and ESLs)	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH410	SRT-BH410	SRT-BH410	SRT-BH411	SRT-BH411	SRT-BH411	SRT-BH411	SRT-BH412	SRT-BH412
Sample_Depth_Avg										0.2	0.5	1.5	2	3	0.5	0.5	0.5	1.5	2	3	0.2	0.8	1.5	0.15	0.5	1	2	0.11	0.5
Sampled_Date_Time										06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	10-06-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18
Field_ID										SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0	SRT_BH408_3.0	SRT_BH409_0.5	QCA101	QCB101	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH411_0.15	SRT_BH411_0.5	SRT_BH411_1.0	SRT_BH411_2.0	SRT_BH412_0.11	SRT_BH412_0.5
Fenamiphos	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	-	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-
Fenitrothion	mg/kg	0.1								-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Fenthion	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	-	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-
Malathion	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	<0.1	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-
Parathion-methyl	mg/kg	0.2								-	<0.2	-	-	-	<0.2	<0.2	-	-	-	-	-	<0.2	-	-	<0.2	-	-	<0.2	-
Monocrotophos	mg/kg	0.2								-	<0.2	-	-	-	<0.2	<0.2	-	-	-	-	-	<0.2	-	-	<0.2	-	-	<0.2	-
Parathion	mg/kg	0.2								-	<0.2	-	-	-	<0.2	<0.2	<0.1	-	-	-	-	<0.2	-	-	<0.2	-	-	<0.2	-
Pirimphos-ethyl	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	-	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-
Prothiofos	mg/kg	0.05								-	<0.05	-	-	-	<0.05	<0.05	-	-	-	-	-	<0.05	-	-	<0.05	-	-	<0.05	-
Ronnel	mg/kg	0.1								-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Phenols																													
Phenolics (Sum of total)	mg/kg	1								-	<1	-	-	-	<1	<1	<5	-	-	-	-	<1	-	-	<1	-	-	<1	-
Polychlorinated Biphenyls																													
Aroclor 1016	mg/kg	0.1								-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1232	mg/kg	0.1								-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1242	mg/kg	0.1								-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1248	mg/kg	0.1								-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1254	mg/kg	0.1								-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1260	mg/kg	0.1								-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1221	mg/kg	0.1								-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
PCB (Sum of Total-Lab Reported)	mg/kg	0.1	1							-	<0.1	-	-	-	<0.1	<0.1	<0.1	-	-	-	-	<0.1	-	-	<0.1	-	-	<0.1	-
Volatile Organic Compounds																													
1,4-Dichlorobenzene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
4-Chlorotoluene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
Cyclohexane	mg/kg	1								-	-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichlorobenzene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
2-Chlorotoluene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
Bromobenzene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
Chlorobenzene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
1,2,4-trimethylbenzene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
1,3,5-Trimethylbenzene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
Isopropylbenzene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
n-Butylbenzene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
n-Propylbenzene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
p-Isopropyltoluene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
sec-Butylbenzene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
Styrene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
tert-Butylbenzene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
Methyl Ethyl Ketone	mg/kg	5								-	<5	<5	-	<5	<5	<5	-	-	<5	-	-	-	<5	-	-	-	-	-	-
2-Hexanone	mg/kg	5								-	<5	<5	-	<5	<5	<5	-	-	<5	-	-	-	<5	-	-	-	-	-	-
Methyl iso-butyl ketone	mg/kg	5								-	<5	<5	-	<5	<5	<5	-	-	<5	-	-	-	<5	-	-	-	-	-	-
Vinyl acetate	mg/kg	5								-	<5	<5	-	<5	<5	<5	-	-	<5	-	-	-	<5	-	-	-	-	-	-
1,1,1,2-Tetrachloroethane	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
1,1,1-Trichloroethane	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
1,1,2-Trichloroethane	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
1,2,3-Trichloropropane	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
1,2-Dibromoethane	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
1,1-Dichloroethane	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
1,2-Dichloroethane	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
1,1-Dichloroethene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
cis-1,2-Dichloroethene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
trans-1,2-dichloroethene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
1,2-Dichloropropane	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
1,3-Dichloropropane	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
2,2-Dichloropropane	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
1,1-Dichloropropene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
cis-1,3-Dichloropropene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
trans-1,3-dichloropropene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
cis-1,4-Dichloro-2-butene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
trans-1,4-Dichloro-2-butene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
Bromochloromethane	mg/kg	1								-	-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
Bromoform	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
Bromomethane	mg/kg	5								-	<5	<5	-	<5	<5	<5	<1	-	<5	-	-	-	<5	-	-	-	-	-	-
Carbon disulfide	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
Carbon tetrachloride	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
Chlorodibromomethane	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
Chloroethane	mg/kg	5								-	<5	<5	-	<5	<5	<5	<1	-	<5	-	-	-	<5	-	-	-	-	-	-
Chloroform	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
Chloromethane	mg/kg	5								-	<5	<5	-	<5	<5	<5	<1	-	<5	-	-	-	<5	-	-	-	-	-	-
Dibromomethane	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
Dichlorodifluoromethane	mg/kg	5								-	<5	<5	-	<5	<5	<5	<1	-	<5	-	-	-	<5	-	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
Iodomethane	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
Pentachloroethane	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
Trichloroethene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
Tetrachloroethene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-
Trichlorofluoromethane	mg/kg	5								-	<5	<5	-	<5	<5	<5	<1	-	<5	-	-	-	<5	-	-	-	-	-	-
Vinyl chloride	mg/kg	5								-	<5	<5	-	<5	<5	<5	<1	-	<5	-	-	-	<5	-	-	-	-	-	-
Perfluorinated Compounds																													
10:2 Fluorotelomer sulfonic acid	mg/kg	0.0005								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:2 Fluorotelomer sulfonic acid	mg/kg	0.0005								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8:2 Fluorotelomer sulfonate	mg/kg	0.0005								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Et-FOSA	mg/kg	0.0005								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Et-FOSE	mg/kg	0.0005								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Me-FOSA	mg/kg	0.0005								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Me-FOSE	mg/kg	0.0005								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid (PFBA)	mg/kg	0.001								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonic acid	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-pentanoic acid (PFPeA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentane sulfonic acid	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PFDcS	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum of PFHxS and PFOS (lab reported)	mg/kg	0.0002	2 [#2]							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

								Location_Code	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH410	SRT-BH410	SRT-BH410	SRT-BH411	SRT-BH411	SRT-BH411	SRT-BH411	SRT-BH412	SRT-BH412
								Sample_Depth_Avg	0.2	0.5	1.5	2	3	0.5	0.5	0.5	1.5	2	3	0.2	0.8	1.5	0.15	0.5	1	2	0.11	0.5
								Sampled_Date_Time	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	10-06-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18
								Field_ID	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0	SRT_BH408_3.0	SRT_BH409_0.5	QCA101	QCB101	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH411_0.15	SRT_BH411_0.5	SRT_BH411_1.0	SRT_BH411_2.0	SRT_BH412_0.11	SRT_BH412_0.5
			NSW HIL - Residential - Minimal Access to Soil (Residential B)	NEPM 2013 Mgmt Limits - Residential and public open space, Coarse Soil	NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand				Ecological Criteria (EILs and ESLs)																			
ChemName	Units	EQL			0-1m	1-2m	2-4m	>4m																				
Sum of WA DER PFAS (n=10)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum of PFASs (n=28)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanesulfonic acid (PFBS)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002							1 #10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanoate (PFOA)	mg/kg	0.0002	20 #2						10 #10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanesulfonic acid (PFHxS)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorononanoic acid (PFNA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonamide (PFOSA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes

#1 – CRC Care (2011) direct contact criteria, residential B
#2 – PFAS National Environmental Management Plan (NEMP), Table 2, criteria for residential with minimal opportunities for soil access
#3 – NL: Non limiting, derived soil HSL exceeds soil saturation concentration
#4 – Most conservative ESLs adopted, coarse soils, urban residential and public open space
#5 – Conservative ESL for xylene adopted, fine soil, urban residential and public open space
#6 – Generic EIL adopted from Table 1B(5) of NEPM (NEPC 2013) for urban residential and public open space
#7 – EILs calculated using site specific soil qualities
#8 – EIL based on copper value specified for lower limit for aged contamination presented in Table A1 of Appendix A, Schedule BSa of NEPM (NEPC 2013)
#9 – Generic EIL adopted from Table 1B(4) of NEPM (NEPC 2013) for urban residential and public open space
#10 – PFAS National Environmental Management Plan (NEMP), Table 3, criteria for public open space (qualified in NEMP)

Data Comments

NAD - no asbestos detected
AD - asbestos detected
* - Asbestos not found at the reporting limit of 0.1 mg/kg by polarised light microscopy including dispersion staining.
Asbestos material was detected and positively identifed as chrysotile, one piece 12 x 9 x 2 mm

Table A2 - Soil Analytical Results, Residential B Land Use Scenario

									Location_Code	SRT-BH412	SRT-BH412	SRT-BH413A	SRT-BH413A	SRT-BH413A	SRT-BH414	SRT-BH415	SRT-BH415	SRT-BH415	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH418	SRT-BH418	SRT-BH418
									Sample_Depth_Avg	1	2	0.5	1.5	3	0.4	0.5	0.5	0.5	0.25	0.5	1	1.5	3	0.5	1.5	2	3	0.2	1	1
									Sampled_Date_Time	06-10-18	06-10-18	28-10-18	28-10-18	28-10-18	13-10-18	20-10-18	20-10-18	20-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	27-10-18	27-10-18	27-10-18
									Field_ID	SRT_BH412_1.0	SRT_BH412_2.0	SRT-BH413A-0.5	SRT-BH413A-1.5	SRT-BH413A-3.0	SRT-BH414_0.4	SRT-BH415-0.5	SRT-QCA106	QCB106	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT-BH418-0.2	SRT-BH418-1.0	SRT-QCA109
			NSW HIL - Residential - Minimal Access to Soil (Residential B)	NEPM 2013 Mgmt Limits - Residential and public open space, Coarse Soil	NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand				Ecological Criteria (EILs and ESLs)																					
ChemName	**Units**	**EQL**			0-1m	1-2m	2-4m	>4m																						
Asbestos																														
Asbestos in soil (>7mm ACM)	%w/w	0.01	**0.04**							<0.01	-	<0.01	-	-	<0.01	<0.01	-	-	<0.01	-	<0.01	-	-	<0.01	-	-	-	<0.01	<0.01	-
Asbestos in soil (<7mm AF/FA)	%w/w	0.001	**0.001**							<0.001	-	<0.001	-	-	<0.001	<0.001	-	-	<0.001	-	<0.001	-	-	<0.001	-	-	-	<0.001	<0.001	-
Weight Asbestos in soil (>7mm ACM)	g	0.1								<0.1	-	<0.1	-	-	<0.1	<0.1	-	-	<0.1	-	<0.1	-	-	<0.1	-	-	-	<0.1	<0.1	-
Weight Asbestos in soil (<7mm AF/FA)	g	0.0004								<0.0004	-	<0.0004	-	-	<0.0004	<0.0004	-	-	<0.0004	-	<0.0004	-	-	<0.0004	-	-	-	<0.0004	<0.0004	-
Asbestos (1-Detect or <1-Non-Detect)	No	0.1	**NAD**							NAD	-	NAD	-	-	NAD	NAD	-	-	NAD	-	NAD	-	-	NAD	-	-	-	NAD	NAD	-
Asbestos Fines	mg/kg	5								NFD	-	NFD	-	-	NFD	NFD	-	-	NFD	-	NFD	-	-	NFD	-	-	-	NFD	NFD	-
Fibrous Asbestos	mg/kg	0.0004								<0.0004	-	<0.0004	-	-	<0.0004	<0.0004	-	-	<0.0004	-	<0.0004	-	-	<0.0004	-	-	-	<0.0004	<0.0004	-
Mass of test sample	g	0.1								536	-	521	-	-	620	520	-	-	532	-	408	-	-	486	-	-	-	517	638	-
Sample weight (dry)	g	0.01								536	-	521	-	-	620	520	-	-	532	-	408	-	-	486	-	-	-	517	638	-
Moisture																														
Moisture	%	0.1								9.4	8.7	11.3	9.7	3.9	14	8.8	8.9	6.6	13	13.2	16.7	31.6	6.2	13.8	6.1	5.1	4.7	9.4	4.4	5.4
TRHs																														
TRH C6 - C10 Fraction F1	mg/kg	10		**700**					**180 #4**	<10	<10	<10	<10	<10	<10	<10	<10	<25	<10	<10	-	<10	<10	<10	<10	-	<10	<10	<10	<10
TRH C6 - C10 Fraction Less BTEX F1	mg/kg	10	**5600 #1**		**45**	**70**	**110**	**200**		<10	<10	<10	<10	<10	<10	<10	<10	<25	<10	<10	-	<10	<10	<10	<10	-	<10	<10	<10	<10
TRH >C10 - C16 Fraction F2	mg/kg	50		**1000**					**120 #4**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	-	<50	<50	<50	<50	-	<50	<50	<50	<50
TRH >C10 - C16 Fraction Less Naphthalene (F2)	mg/kg	50	**4200 #1**		**110**	**240**	**440**	**NL #3**		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	-	<50	<50	<50	<50	-	<50	<50	<50	<50
TRH >C16 - C34 Fraction F3	mg/kg	100	**5800 #1**	**2500**					**300 #4**	<100	<100	<100	<100	<100	**430**	<100	<100	<100	<100	<100	-	<100	<100	<100	<100	-	<100	210	<100	<100
TRH >C34 - C40 Fraction F4	mg/kg	100	**8100 #1**	**10000**					**2800 #4**	<100	<100	<100	<100	<100	110	<100	<100	<100	<100	<100	-	<100	<100	<100	<100	-	<100	<100	<100	<100
TRH+C10 - C40 (Sum of total) (Lab Reported)	mg/kg	50								<50	<50	<50	<50	<50	540	<50	<50	<50	<50	<50	-	<50	<50	<50	<50	-	<50	210	<50	<50
BTEXN																														
Benzene	mg/kg	0.2	**140 #1**		**0.5**	**0.5**	**0.5**	**0.5**	**50 #4**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	0.5	**21000 #1**		**160**	**220**	**310**	**540**	**85 #4**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	0.5	**5900 #1**		**55**	**NL #3**	**NL #3**	**NL #3**	**70 #4**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenes (m & p)	mg/kg	0.5							**45 #5**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (o)	mg/kg	0.5								<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5	**17000 #1**		**40**	**60**	**95**	**170**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Total BTEX	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2
Naphthalene	mg/kg		**2200 #1**		**3**	**NL #3**	**NL #3**	**NL #3**	**170 #6**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Heavy Metals																														
Arsenic	mg/kg	5	**500**						**100 #7**	<5	<5	10	<5	<5	<5	<5	<5	<4	6	<5	-	<5	<5	<5	<5	-	<5	<5	<5	<5
Cadmium	mg/kg	1	**150**							<1	<1	<1	<1	<1	<1	<1	<1	<0.4	6	<1	-	<1	<1	<1	<1	-	<1	<1	<1	<1
Chromium	mg/kg	2	**500**						**330 #7**	7	5	8	3	<2	48	7	7	7	20	7	-	<2	<2	15	22	-	2	11	<2	<2
Copper	mg/kg	5	**30,000**						**60 #8**	12	<5	**72**	<5	<5	16	<5	<5	5	28	40	-	<5	<5	32	5	-	<5	**63**	<5	11
Lead	mg/kg	5	**1200**						**1100 #9**	63	<5	580	11	<5	976	16	14	19	813	276	-	7	<5	30	9	-	<5	<5	<5	250
Mercury	mg/kg	0.1	**120**							<0.1	<0.1	1.3	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.2	1.6	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	0.1
Nickel	mg/kg	2	**1200**						**55 #7**	4	4	10	<2	<2	17	3	3	4	3	5	-	<2	<2	23	<2	-	<2	30	<2	<2
Zinc	mg/kg	5	**60,000**						**330 #7**	126	69	314	10	<5	160	20	21	21	**2100**	227	-	6	14	265	11	-	8	36	<5	85
PAHs																														
Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2								-	-	-	-	-	-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/kg	0.5								<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	mg/kg	0.5								<0.5	<0.5	<0.5	<0.5	<0.5	5.8	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Anthracene	mg/kg	0.5								<0.5	<0.5	<0.5	<0.5	<0.5	5.1	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	mg/kg	0.5								<0.5	<0.5	0.6	<0.5	<0.5	6.7	<0.5	<0.5	<0.1	0.5	0.8	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	mg/kg	0.5							**0.7 #6**	<0.5	<0.5	0.6	<0.5	<0.5	**5.9**	<0.5	<0.5	0.06	0.6	**0.8**	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5	**4**							<0.5	<0.5	0.7	<0.5	<0.5	**8.8**	<0.5	<0.5	<0.5	0.7	1	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5	**4**							0.6	0.6	1	0.6	0.6	**8.8**	0.6	0.6	<0.5	1	1.3	-	0.6	0.6	0.6	0.6	-	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5	**4**							1.2	1.2	1.3	1.2	1.2	**8.8**	1.2	1.2	<0.5	1.3	1.6	-	1.2	1.2	1.2	1.2	-	1.2	1.2	1.2	1.2
Benzo(b)&(j)fluoranthene	mg/kg	0.5								<0.5	<0.5	0.7	<0.5	<0.5	6.6	<0.5	<0.5	-	0.7	0.8	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	mg/kg	0.5								<0.5	<0.5	<0.5	<0.5	<0.5	3.3	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	mg/kg	0.5								<0.5	<0.5	<0.5	<0.5	<0.5	3	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Chrysene	mg/kg	0.5								<0.5	<0.5	0.6	<0.5	<0.5	5.4	<0.5	<0.5	<0.1	0.5	0.7	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	mg/kg	0.5								<0.5	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Fluoranthene	mg/kg	0.5								0.8	<0.5	0.9	<0.5	<0.5	17.8	<0.5	<0.5	0.1	1.1	1.7	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.9
Fluorene	mg/kg	0.5								<0.5	<0.5	<0.5	<0.5	<0.5	3.4	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5								<0.5	<0.5	<0.5	<0.5	<0.5	2.7	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Naphthalene	mg/kg	0.5			**3**	**NL #4**	**NL #4**	**NL #4**	**170 #6**	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Phenanthrene	mg/kg	0.5								<0.5	<0.5	<0.5	<0.5	<0.5	20	<0.5	<0.5	<0.1	<0.5	1	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
Pyrene	mg/kg	0.5								0.8	<0.5	1	<0.5	<0.5	15.4	<0.5	<0.5	0.1	1.2	1.7	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.9
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5	**400**							1.6	<0.5	4.4	<0.5	<0.5	104	<0.5	<0.5	-	4.6	7.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	1.8
Organochlorine Pesticides																														
a-BHC	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Aldrin	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Dieldrin	mg/kg	0.05								0.23	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Aldrin & Dieldrin (Sum of total) (Lab Reported)	mg/kg	0.05	**10**							0.23	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
b-BHC	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
cis-Chlordane	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
trans-Chlordane	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Chlordane (Sum of total)	mg/kg	0.05	**90**							<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
d-BHC	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
DDD	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
DDE	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
DDT	mg/kg	0.2							**180 #6**	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.1	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-	-
DDT+DDE+DDD (Sum of total) (Lab Reported)	mg/kg	0.05	**600**							<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Endosulfan	mg/kg	0.05	**400**							<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Endosulfan I	mg/kg	0.05	**400**							<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Endosulfan II	mg/kg	0.05	**400**							<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Endosulfan sulphate	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Endrin	mg/kg	0.05	**20**							<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Endrin aldehyde	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Endrin ketone	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
g-BHC	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Heptachlor	mg/kg	0.05	**10**							<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Heptachlor epoxide	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Hexachlorobenzene	mg/kg	0.05	**15**							<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Methoxychlor	mg/kg	0.2	**500**							<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.1	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-	-
Organophosphorous Pesticides																														
Azinphos-methyl	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Bromophos-ethyl	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Carbophenothion	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Chlorfenvinphos	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Chlorpyriphos	mg/kg	0.05	**340**							<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Chlorpyriphos-methyl	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Demeton-s-methyl	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Diazinon	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Dichlorvos	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Dimethoate	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Ethion	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-

			NSW HIL - Residential - Minimal Access to Soil (Residential B)	NEPM 2013 Mgmt Limits - Residential and public open space, Coarse Soil	NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand				Ecological Criteria (EILs and ESLs)																					
Location_Code										SRT-BH412	SRT-BH412	SRT-BH413A	SRT-BH413A	SRT-BH413A	SRT-BH414	SRT-BH415	SRT-BH415	SRT-BH415	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH418	SRT-BH418	SRT-BH418
Sample_Depth_Avg										1	2	0.5	1.5	3	0.4	0.5	0.5	0.5	0.25	0.5	1	1.5	3	0.5	1.5	2	3	0.2	1	1
Sampled_Date_Time										06-10-18	06-10-18	28-10-18	28-10-18	28-10-18	13-10-18	20-10-18	20-10-18	20-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	27-10-18	27-10-18	27-10-18
Field_ID										SRT_BH412_1.0	SRT_BH412_2.0	SRT-BH413A-0.5	SRT-BH413A-1.5	SRT-BH413A-3.0	SRT-BH414_0.4	SRT-BH415-0.5	SRT-QCA106	QCB106	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT-BH418-0.2	SRT-BH418-1.0	SRT-QCA109
ChemName	**Units**	**EQL**			**0-1m**	**1-2m**	**2-4m**	**>4m**																						
Fenamiphos	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Fenitrothion	mg/kg	0.1								-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Fenthion	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Malathion	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Parathion-methyl	mg/kg	0.2								<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-	-
Monocrotophos	mg/kg	0.2								<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-	-
Parathion	mg/kg	0.2								<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.1	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-	-
Pirimphos-ethyl	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Prothiofos	mg/kg	0.05								<0.05	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-
Ronnel	mg/kg	0.1								-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Phenols																														
Phenolics (Sum of total)	mg/kg	1								<1	-	<1	<1	-	<1	<1	<1	<5	-	<1	-	-	-	<1	<1	-	-	<1	-	-
Polychlorinated Biphenyls																														
Aroclor 1016	mg/kg	0.1								-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1232	mg/kg	0.1								-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1242	mg/kg	0.1								-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1248	mg/kg	0.1								-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1254	mg/kg	0.1								-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1260	mg/kg	0.1								-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1221	mg/kg	0.1								-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
PCB (Sum of Total-Lab Reported)	mg/kg	0.1	1							0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	-	<0.1	<0.1	-	-	<0.1	-	-
Volatile Organic Compounds																														
1,4-Dichlorobenzene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
4-Chlorotoluene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
Cyclohexane	mg/kg	1								-	-	-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichlorobenzene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
1,2,4-Trichlorobenzene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
1,2-Dichlorobenzene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
1,3-Dichlorobenzene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
2-Chlorotoluene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
Bromobenzene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
Chlorobenzene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
1,2,4-trimethylbenzene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
1,3,5-Trimethylbenzene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
Isopropylbenzene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
n-Butylbenzene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
n-Propylbenzene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
p-Isopropyltoluene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
sec-Butylbenzene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
Styrene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
tert-Butylbenzene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
Methyl Ethyl Ketone	mg/kg	5								-	-	<5	-	-	<5	<5	<5	-	<5	-	<5	-	<5	<5	-	<5	<5	<5	-	-
2-Hexanone	mg/kg	5								-	-	<5	-	-	<5	<5	<5	-	<5	-	<5	-	<5	<5	-	<5	<5	<5	-	-
Methyl iso-butyl ketone	mg/kg	5								-	-	<5	-	-	<5	<5	<5	-	<5	-	<5	-	<5	<5	-	<5	<5	<5	-	-
Vinyl acetate	mg/kg	5								-	-	<5	-	-	<5	<5	<5	-	<5	-	<5	-	<5	<5	-	<5	<5	<5	-	-
1,1,1,2-Tetrachloroethane	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
1,1,2,2-Tetrachloroethane	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
1,1,1-Trichloroethane	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
1,1,2-Trichloroethane	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
1,2,3-Trichloropropane	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
1,2-Dibromo-3-chloropropane	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
1,2-Dibromoethane	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
1,1-Dichloroethane	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
1,2-Dichloroethane	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
1,1-Dichloroethene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
cis-1,2-Dichloroethene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
trans-1,2-dichloroethene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
1,2-Dichloropropane	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
1,3-Dichloropropane	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
2,2-Dichloropropane	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
1,1-Dichloropropene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
cis-1,3-Dichloropropene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
trans-1,3-dichloropropene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
cis-1,4-Dichloro-2-butene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
trans-1,4-Dichloro-2-butene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
Bromochloromethane	mg/kg	1								-	-	-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
Bromoform	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
Bromomethane	mg/kg	5								-	-	<5	-	-	<5	<5	<5	<1	<5	-	<5	-	<5	<5	-	<5	<5	<5	-	-
Carbon disulfide	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
Carbon tetrachloride	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
Chlorodibromomethane	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
Chloroethane	mg/kg	5								-	-	<5	-	-	<5	<5	<5	<1	<5	-	<5	-	<5	<5	-	<5	<5	<5	-	-
Chloroform	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
Chloromethane	mg/kg	5								-	-	<5	-	-	<5	<5	<5	<1	<5	-	<5	-	<5	<5	-	<5	<5	<5	-	-
Dibromomethane	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
Dichlorodifluoromethane	mg/kg	5								-	-	<5	-	-	<5	<5	<5	<1	<5	-	<5	-	<5	<5	-	<5	<5	<5	-	-
Hexachlorobutadiene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
Iodomethane	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
Pentachloroethane	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
Trichloroethene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
Tetrachloroethene	mg/kg	0.5								-	-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
Trichlorofluoromethane	mg/kg	5								-	-	<5	-	-	<5	<5	<5	<1	<5	-	<5	-	<5	<5	-	<5	<5	<5	-	-
Vinyl chloride	mg/kg	5								-	-	<5	-	-	<5	<5	<5	<1	<5	-	<5	-	<5	<5	-	<5	<5	<5	-	-
Perfluorinated Compounds																														
10:2 Fluorotelomer sulfonic acid	mg/kg	0.0005								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:2 Fluorotelomer sulfonic acid	mg/kg	0.0005								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8:2 Fluorotelomer sulfonate	mg/kg	0.0005								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Et-FOSA	mg/kg	0.0005								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Et-FOSE	mg/kg	0.0005								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Me-FOSA	mg/kg	0.0005								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Me-FOSE	mg/kg	0.0005								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid (PFBA)	mg/kg	0.001								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonic acid	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-pentanoic acid (PFPeA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentane sulfonic acid	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PFDcS	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum of PFHxS and PFOS (lab reported)	mg/kg	0.0002	2 [#2]							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

								Location_Code	SRT-BH412	SRT-BH412	SRT-BH413A	SRT-BH413A	SRT-BH413A	SRT-BH414	SRT-BH415	SRT-BH415	SRT-BH415	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH418	SRT-BH418	SRT-BH418
								Sample_Depth_Avg	1	2	0.5	1.5	3	0.4	0.5	0.5	0.5	0.25	0.5	1	1.5	3	0.5	1.5	2	3	0.2	1	1
								Sampled_Date_Time	06-10-18	06-10-18	28-10-18	28-10-18	28-10-18	13-10-18	20-10-18	20-10-18	20-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	27-10-18	27-10-18	27-10-18
								Field_ID	SRT_BH412_1.0	SRT_BH412_2.0	SRT-BH413A-0.5	SRT-BH413A-1.5	SRT-BH413A-3.0	SRT-BH414_0.4	SRT-BH415-0.5	SRT-QCA106	QCB106	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT-BH418-0.2	SRT-BH418-1.0	SRT-QCA109
			NSW HIL - Residential - Minimal Access to Soil (Residential B)	NEPM 2013 Mgmt Limits - Residential and public open space, Coarse Soil	NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand				Ecological Criteria (EILs and ESLs)																					
ChemName	Units	EQL			0-1m	1-2m	2-4m	>4m																					
Sum of WA DER PFAS (n=10)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum of PFASs (n=28)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanesulfonic acid (PFBS)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002							1 #10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanoate (PFOA)	mg/kg	0.0002	20 #2						10 #10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanesulfonic acid (PFHxS)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorononanoic acid (PFNA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonamide (PFOSA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes

#1 – CRC Care (2011) direct contact criteria, residential B
#2 – PFAS National Environmental Management Plan (NEMP), Table 2, criteria for residential with minimal opportunities for soil access
#3 – NL: Non limiting, derived soil HSL exceeds soil saturation concentration
#4 – Most conservative ESLs adopted, coarse soils, urban residential and public open space
#5 – Conservative ESL for xylene adopted, fine soil, urban residential and public open space
#6 – Generic EIL adopted from Table 1B(5) of NEPM (NEPC 2013) for urban residential and public open space
#7 – EILs calculated using site specific soil qualities
#8 – EIL based on copper value specified for lower limit for aged contamination presented in Table A1 of Appendix A, Schedule B5a of NEPM (NEPC 2013)
#9 – Generic EIL adopted from Table 1B(4) of NEPM (NEPC 2013) for urban residential and public open space
#10 – PFAS National Environmental Management Plan (NEMP), Table 3, criteria for public open space (qualified in NEMP)

Data Comments

NAD - no asbestos detected
AD - asbestos detected
* - Asbestos not found at the reporting limit of 0.1 mg/kg by polarised light microscopy including dispersion staining.
Asbestos material was detected and positively identifed as chrysotile, one piece 12 x 9 x 2 mm

									Location_Code	SRT-BH418	SRT-BH419	SRT-BH419	SRT-BH419	SRT-BH419	SRT-BH419	SRT-BH420	SRT-BH420	SRT-BH420	SRT-BH420	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH423	SRT-BH423
									Sample_Depth_Avg	1	0.25	1	1	1	1.05	0.5	1	2	0.25	0.5	0.5	0.5	1	3	0.5	1	1	1	1.5	0.5	2
									Sampled_Date_Time	27-10-18	13-10-18	13-10-18	13-10-18	13-10-18	20-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	07-10-18	10-07-18	06-10-18	07-10-18	07-10-18	13-10-18	13-10-18
									Field_ID	SRT-QCB109	SRT-BH419_0.25	SRT_QCA104	QCB104	SRT-BH419_1.0	SRT-BH419-1.05	SRT-BH420-0.5	SRT-BH420-1.0	SRT-BH420-2.0	SRT_BH421_0.25	SRT_BH421_0.5	QCA102	QCB102	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	QCB103	QCA103	SRT_BH422_1.0	SRT_BH422_1.5	SRT-BH423_0.5	SRT-BH423_2.0
			NSW HIL - Residential - Minimal Access to Soil (Residential B)	NEPM 2013 Mgmt Limits - Residential and public open space, Coarse Soil	NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand				Ecological Criteria (EILs and ESLs)																								
					0-1m	1-2m	2-4m	>4m																								
ChemName	**Units**	**EQL**																													
Asbestos																															
Asbestos in soil (>7mm ACM)	%w/w	0.01	**0.04**							-	-	-	-	<0.01	<0.01	<0.01	-	-	<0.01	-	-	-	-	-	<0.01	-	-	-	-	<0.01	-
Asbestos in soil (<7mm AF/FA)	%w/w	0.001	**0.001**							-	-	-	-	<0.001	<0.001	<0.001	-	-	<0.001	-	-	-	-	-	<0.001	-	-	-	-	<0.001	-
Weight Asbestos in soil (>7mm ACM)	g	0.1								-	-	-	-	<0.1	<0.1	0.7	-	-	<0.1	-	-	-	-	-	<0.1	-	-	-	-	<0.1	-
Weight Asbestos in soil (<7mm AF/FA)	g	0.0004								-	-	-	-	<0.0004	<0.0004	<0.0004	-	-	<0.0004	-	-	-	-	-	<0.0004	-	-	-	-	<0.0004	-
Asbestos (1-Detect or <1-Non-Detect)	No	0.1	**NAD**							-	-	-	NAD	NAD	NAD	**AD***	-	-	NAD	-	-	-	-	-	NAD	-	-	-	-	NAD	-
Asbestos Fines	mg/kg	5								-	-	-	NFD	NFD	NFD	NFD	-	-	NFD	-	-	-	-	-	NFD	-	-	-	-	NFD	-
Fibrous Asbestos	mg/kg	0.0004								-	-	-	-	<0.0004	<0.0004	<0.0004	-	-	<0.0004	-	-	-	-	-	<0.0004	-	-	-	-	<0.0004	-
Mass of test sample	g	0.1								-	-	-	35	667	557	1090	-	-	658	-	-	-	-	-	577	-	-	-	-	287	-
Sample weight (dry)	g	0.01								-	-	-	35	667	557	1090	-	-	658	-	-	-	-	-	577	-	-	-	-	287	-
Moisture																															
Moisture	%	0.1								4.6	15.6	13.5	12	14.3	17.6	11	12.9	5.4	18.4	12.1	10.6	2.1	9.7	4.2	14	5.3	8.5	10.8	13.4	14.2	3.6
TRHs																															
TRH C6 - C10 Fraction F1	mg/kg	10		**700**					**180** [#4]	<25	<10	<10	<25	<10	<10	<10	<10	<10	-	<10	<10	<25	<10	<10	<10	<25	<10	<10	<10	<10	<10
TRH C6 - C10 Fraction Less BTEX F1	mg/kg	10	**5600** [#1]		**45**	**70**	**110**	**200**		<25	<10	<10	<25	<10	<10	<10	<10	<10	-	<10	<10	<25	<10	<10	<10	<25	<10	<10	<10	<10	<10
TRH >C10 - C16 Fraction F2	mg/kg	50		**1000**					**120** [#4]	<50	<50	<50	<50	<50	<50	<50	<50	<50	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
TRH >C10 - C16 Fraction Less Naphthalene (F2)	mg/kg	50	**4200** [#1]		**110**	**240**	**440**	**NL** [#3]		<50	<50	<50	<50	<50	<50	<50	<50	<50	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
TRH >C16 - C34 Fraction F3	mg/kg	100	**5800** [#1]	**2500**					**300** [#4]	<100	<100	<100	<100	<100	<100	<100	<100	<100	-	260	250	270	<100	<100	160	<100	<100	<100	<100	<100	<100
TRH >C34 - C40 Fraction F4	mg/kg	100	**8100** [#1]	**10000**					**2800** [#4]	<100	<100	<100	<100	<100	<100	<100	<100	<100	-	240	240	190	<100	<100	<100	<100	<100	<100	<100	<100	<100
TRH+C10 - C40 (Sum of total) (Lab Reported)	mg/kg	50								<50	<50	<50	<50	<50	<50	<50	<50	<50	-	500	490	470	<50	<50	160	<50	<50	<50	<50	<50	<50
BTEXN																															
Benzene	mg/kg	0.2	**140** [#1]		**0.5**	**0.5**	**0.5**	**0.5**	**50** [#4]	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	0.5	**21000** [#1]		**160**	**220**	**310**	**540**	**85** [#4]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	0.5	**5900** [#1]		**55**	**NL** [#3]	**NL** [#3]	**NL** [#3]	**70** [#4]	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenes (m & p)	mg/kg	0.5							**45** [#5]	<2	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (o)	mg/kg	0.5								<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5	**17000** [#1]		**40**	**60**	**95**	**170**		<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
Total BTEX	mg/kg	0.2								-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	mg/kg		**2200** [#1]		**3**	**NL** [#3]	**NL** [#3]	**NL** [#3]	**170** [#6]	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Heavy Metals																															
Arsenic	mg/kg	5	**500**						**100** [#7]	<4	<5	<5	<4	<5	<5	11	9	<5	-	<5	<5	<4	<5	<5	<5	<4	<5	<5	<5	9	<5
Cadmium	mg/kg	1	**150**							<0.4	<1	<1	<0.4	<1	<1	2	<1	<1	-	<1	<1	<0.4	<1	<1	<1	<0.4	<1	<1	<1	<1	<1
Chromium	mg/kg	2	**500**						**330** [#7]	<1	10	10	10	10	7	9	12	<2	-	12	9	10	3	<2	3	<1	<2	<2	<2	13	<2
Copper	mg/kg	5	**30,000**						**60** [#8]	1	27	32	40	38	27	**76**	**78**	<5	-	20	19	28	<5	<5	30	1	<5	<5	5	58	<5
Lead	mg/kg	5	**1200**						**1100** [#9]	7	31	28	20	23	64	618	628	15	-	22	23	16	<5	<5	261	7	<5	31	29	250	7
Mercury	mg/kg	0.1	**120**							<0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.6	5.8	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.4	<0.1
Nickel	mg/kg	2	**1200**						**55** [#7]	<1	6	6	5	6	3	8	10	<2	-	10	6	8	<2	<2	3	<1	<2	<2	<2	8	<2
Zinc	mg/kg	5	**60,000**						**330** [#7]	8	58	65	63	64	91	**804**	**481**	17	-	48	53	36	<5	18	150	12	13	47	108	**500**	<5
PAHs																															
Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2								0.3	-	-	<0.2	-	-	-	-	-	-	-	-	1	-	-	-	<0.2	-	-	-	-	-
Acenaphthene	mg/kg	0.5								<0.1	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	0.1	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	mg/kg	0.5								<0.1	<0.5	<0.5	<0.1	<0.5	0.6	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	mg/kg	0.5								<0.1	<0.5	<0.5	<0.1	<0.5	1.9	<0.5	<0.5	<0.5	-	<0.5	0.6	0.3	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	mg/kg	0.5								0.2	0.6	<0.5	0.2	<0.5	3	0.6	<0.5	<0.5	-	0.8	1	0.9	<0.5	<0.5	1.4	<0.1	0.6	<0.5	0.9	1.7	<0.5
Benzo(a)pyrene	mg/kg	0.5							**0.7** [#6]	0.2	0.6	<0.5	0.1	<0.5	**2.5**	**0.8**	<0.5	<0.5	-	**0.8**	**1**	**0.85**	<0.5	<0.5	**1.4**	0.06	0.6	<0.5	**0.9**	**2**	<0.5
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5	**4**							<0.5	0.7	<0.5	<0.5	<0.5	**3.3**	0.9	<0.5	<0.5	-	1	1.2	1.1	<0.5	<0.5	1.8	<0.5	0.7	<0.5	1.1	2.6	<0.5
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5	**4**							<0.5	1	0.6	<0.5	0.6	**3.6**	1.2	0.6	0.6	-	1.3	1.5	1.2	0.6	0.6	2	<0.5	1	0.6	1.4	2.8	0.6
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5	**4**							<0.5	1.3	1.2	<0.5	1.2	**3.8**	1.6	1.2	1.2	-	1.6	1.8	1.2	1.2	1.2	2.3	<0.5	1.3	1.2	1.7	**3.1**	1.2
Benzo(b)&(j)fluoranthene	mg/kg	0.5								-	0.6	<0.5	-	<0.5	2.8	0.8	<0.5	<0.5	-	0.8	1	-	<0.5	<0.5	1.4	-	0.6	<0.5	0.8	2.1	<0.5
Benzo(g,h,i)perylene	mg/kg	0.5								0.1	<0.5	<0.5	<0.1	<0.5	1.2	<0.5	<0.5	<0.5	-	<0.5	<0.5	0.5	<0.5	<0.5	0.6	<0.1	<0.5	<0.5	<0.5	1.2	<0.5
Benzo(k)fluoranthene	mg/kg	0.5								-	<0.5	<0.5	-	<0.5	1.2	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	0.6	-	<0.5	<0.5	<0.5	0.8	<0.5
Chrysene	mg/kg	0.5								0.2	0.5	<0.5	0.1	<0.5	2.6	0.6	<0.5	<0.5	-	0.8	1	0.9	<0.5	<0.5	1.2	<0.1	0.5	<0.5	0.8	1.7	<0.5
Dibenz(a,h)anthracene	mg/kg	0.5								<0.1	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	mg/kg	0.5								0.3	1.6	<0.5	0.3	<0.5	8.7	1.3	0.9	<0.5	-	2.2	2.6	2.1	<0.5	<0.5	3.3	0.1	1.3	0.8	2.1	3.8	<0.5
Fluorene	mg/kg	0.5								<0.1	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	0.2	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5								0.1	<0.5	<0.5	<0.1	<0.5	1	<0.5	<0.5	<0.5	-	<0.5	<0.5	0.4	<0.5	<0.5	0.5	<0.1	<0.5	<0.5	<0.5	0.9	<0.5
Naphthalene	mg/kg	0.5			**3**	**NL** [#4]	**NL** [#4]	**NL** [#4]	**170** [#6]	<0.1	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	mg/kg	0.5								0.2	1.1	<0.5	0.2	<0.5	8.5	0.5	0.8	<0.5	-	1.8	2	1.6	<0.5	<0.5	1.8	<0.1	0.6	<0.5	0.9	1.8	<0.5
Pyrene	mg/kg	0.5								0.3	1.7	<0.5	0.3	<0.5	7.4	1.4	0.9	<0.5	-	2.3	2.7	2	<0.5	<0.5	3.2	0.1	1.4	0.8	2	4	<0.5
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5	**400**							-	6.7	<0.5	-	<0.5	41.4	6	2.6	<0.5	-	9.5	11.9	-	<0.5	<0.5	15.4	-	5.6	1.6	8.4	20	<0.5
Organochlorine Pesticides																															
a-BHC	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Aldrin	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Dieldrin	mg/kg	0.05								-	0.1	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Aldrin & Dieldrin (Sum of total) (Lab Reported)	mg/kg	0.05	**10**							-	0.1	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
b-BHC	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
cis-Chlordane	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
trans-Chlordane	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Chlordane (Sum of total)	mg/kg	0.05	**90**							-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
d-BHC	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
DDD	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
DDE	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
DDT	mg/kg	0.2							**180** [#6]	-	<0.2	-	-	<0.2	<0.2	<0.2	-	-	<0.2	-	-	-	-	-	<0.2	-	-	-	-	<0.2	-
DDT+DDE+DDD (Sum of total) (Lab Reported)	mg/kg	0.05	**600**							-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Endosulfan	mg/kg	0.05	**400**							-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Endosulfan I	mg/kg	0.05	**400**							-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Endosulfan II	mg/kg	0.05	**400**							-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Endosulfan sulphate	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Endrin	mg/kg	0.05	**20**							-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Endrin aldehyde	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Endrin ketone	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
g-BHC	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Heptachlor	mg/kg	0.05	**10**							-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Heptachlor epoxide	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Hexachlorobenzene	mg/kg	0.05	**15**							-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Methoxychlor	mg/kg	0.2	**500**							-	<0.2	-	-	<0.2	<0.2	<0.2	-	-	<0.2	-	-	-	-	-	<0.2	-	-	-	-	<0.2	-
Organophosphorous Pesticides																															
Azinphos-methyl	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Bromophos-ethyl	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Carbophenothion	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Chlorfenvinphos	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Chlorpyriphos	mg/kg	0.05	**340**							-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Chlorpyriphos-methyl	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Demeton-s-methyl	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Diazinon	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Dichlorvos	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Dimethoate	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-
Ethion	mg/kg	0.05								-	<0.05	-	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-

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								Location_Code	SRT-BH418	SRT-BH419	SRT-BH419	SRT-BH419	SRT-BH419	SRT-BH419	SRT-BH420	SRT-BH420	SRT-BH420	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH423	SRT-BH423
								Sample_Depth_Avg	1	0.25	1	1	1	1.05	0.5	1	2	0.25	0.5	0.5	0.5	1	3	0.5	1	1	1	1.5	0.5	2
								Sampled_Date_Time	27-10-18	13-10-18	13-10-18	13-10-18	13-10-18	20-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	10-06-18	06-10-18	06-10-18	07-10-18	10-07-18	06-10-18	07-10-18	07-10-18	13-10-18	13-10-18
								Field_ID	SRT-QCB109	SRT-BH419_0.25	SRT_QCA104	QCB104	SRT-BH419_1.0	SRT-BH419-1.05	SRT-BH420-0.5	SRT-BH420-1.0	SRT-BH420-2.0	SRT_BH421_0.25	SRT_BH421_0.5	QCA102	QCB102	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	QCB103	QCA103	SRT_BH422_1.0	SRT_BH422_1.5	SRT_BH423_0.5	SRT_BH423_2.0
			NSW HIL - Residential - Minimal Access to Soil (Residential B)	NEPM 2013 Mgmt Limits - Residential and public open space, Coarse Soil	NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand				Ecological Criteria (EILs and ESLs)																				
					0-1m	1-2m	2-4m	>4m																					
ChemName	Units	EQL																											
Sum of WA DER PFAS (n=10)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	0.0002	-	-	-	-	-	-
Sum of PFASs (n=28)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	0.0002	-	-	-	-	-	-
Perfluorobutanesulfonic acid (PFBS)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002							1 #10	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0002	-	-	-	-	-	-
Perfluorooctanoate (PFOA)	mg/kg	0.0002	20 #2						10 #10	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-
Perfluorohexanesulfonic acid (PFHxS)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-
Perfluorononanoic acid (PFNA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005								-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-
Perfluorooctanesulfonamide (PFOSA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005								-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0002								-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-

Notes

#1 – CRC Care (2011) direct contact criteria, residential B
#2 – PFAS National Environmental Management Plan (NEMP), Table 2, criteria for residential with minimal opportunities for soil access
#3 – NL: Non limiting, derived soil HSL exceeds soil saturation concentration
#4 – Most conservative ESLs adopted, coarse soils, urban residential and public open space
#5 – Conservative ESL for xylene adopted, fine soil, urban residential and public open space
#6 – Generic EIL adopted from Table 1B(5) of NEPM (NEPC 2013) for urban residential and public open space
#7 – EILs calculated using site specific soil qualities
#8 – EIL based on copper value specified for lower limit for aged contamination presented in Table A1 of Appendix A, Schedule B5a of NEPM (NEPC 2013)
#9 – Generic EIL adopted from Table 1B(4) of NEPM (NEPC 2013) for urban residential and public open space
#10 – PFAS National Environmental Management Plan (NEMP), Table 3, criteria for public open space (qualified in NEMP)

Data Comments

NAD - no asbestos detected
AD - asbestos detected
* - Asbestos not found at the reporting limit of 0.1 mg/kg by polarised light microscopy including dispersion staining.
Asbestos material was detected and positively identifed as chrysotile, one piece 12 x 9 x 2 mm

| | | |

									Location_Code	SRT-BH423	SRT-BH424	SRT-BH424	SRT-BH424	SRT-BH424	SRT-BH424	SRT-BH425	SRT-BH425	SRT-BH425	SRT-BH425	SRT-BH425	SRT-BH426	SRT-BH426	SRT-BH426	SRT-BH426	SRT-BH426
									Sample_Depth_Avg	4.15	0.5	0.5	0.5	1	3	0.15	0.4	0.5	1	2	0.1	0.5	1	2	4
									Sampled_Date_Time	13-10-18	27-10-18	27-10-18	27-10-18	27-10-18	27-10-18	13-10-18	27-10-18	27-10-18	27-10-18	27-10-18	07-10-18	07-10-18	07-10-18	07-10-18	07-10-18
									Field_ID	SRT_BH423_4.15	SRT-BH424-0.5	SRT-QCA108	SRT-QCB108	SRT-BH424-1.0	SRT-BH424-3.0	SRT_BH425_0.15	SRT-BH425-0.4	SRT-BH425-0.5	SRT-BH425-1.0	SRT-BH425-2.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0	SRT_BH426_2.0	SRT_BH426_4.0
			NSW HIL - Residential - Minimal Access to Soil (Residential B)	NEPM 2013 Mgmt Limits - Residential and public open space, Coarse Soil	NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand				Ecological Criteria (EILs and ESLs)																
ChemName	Units	EQL			0-1m	1-2m	2-4m	>4m																	
Fenamiphos	mg/kg	0.05								-	<0.05	-	-	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Fenitrothion	mg/kg	0.1								-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Fenthion	mg/kg	0.05								-	<0.05	-	-	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Malathion	mg/kg	0.05								-	<0.05	-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Parathion-methyl	mg/kg	0.2								-	<0.2	-	-	-	-	-	<10	-	-	-	-	<0.2	-	-	-
Monocrotophos	mg/kg	0.2								-	<0.2	-	-	-	-	-	<10	-	-	-	-	<0.2	-	-	-
Parathion	mg/kg	0.2								-	<0.2	-	<0.1	-	-	-	<10	-	-	-	-	<0.2	-	-	-
Pirimphos-ethyl	mg/kg	0.05								-	<0.05	-	-	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Prothiofos	mg/kg	0.05								-	<0.05	-	-	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Ronnel	mg/kg	0.1								-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Phenols																									
Phenolics (Sum of total)	mg/kg	1								-	<1	-	<5	-	-	-	6	-	-	-	-	<1	<1	-	-
Polychlorinated Biphenyls																									
Aroclor 1016	mg/kg	0.1								-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1232	mg/kg	0.1								-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1242	mg/kg	0.1								-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1248	mg/kg	0.1								-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1254	mg/kg	0.1								-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1260	mg/kg	0.1								-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1221	mg/kg	0.1								-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
PCB (Sum of Total-Lab Reported)	mg/kg	0.1	**1**							-	<0.1	-	<0.1	-	-	-	<0.2	-	-	-	-	<0.1	<0.1	-	-
Volatile Organic Compounds																									
1,4-Dichlorobenzene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
4-Chlorotoluene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Cyclohexane	mg/kg	1								-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichlorobenzene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,2,4-Trichlorobenzene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,2-Dichlorobenzene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,3-Dichlorobenzene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
2-Chlorotoluene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Bromobenzene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Chlorobenzene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,2,4-trimethylbenzene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,3,5-Trimethylbenzene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Isopropylbenzene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
n-Butylbenzene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
n-Propylbenzene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
p-Isopropyltoluene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
sec-Butylbenzene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Styrene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
tert-Butylbenzene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Methyl Ethyl Ketone	mg/kg	5								<5	<5	-	-	-	-	-	-	-	<5	-	<5	-	<5	-	-
2-Hexanone	mg/kg	5								<5	<5	-	-	-	-	-	-	-	<5	-	<5	-	<5	-	-
Methyl iso-butyl ketone	mg/kg	5								<5	<5	-	-	-	-	-	-	-	<5	-	<5	-	<5	-	-
Vinyl acetate	mg/kg	5								<5	<5	-	-	-	-	-	-	-	<5	-	<5	-	<5	-	-
1,1,1,2-Tetrachloroethane	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,1,2,2-Tetrachloroethane	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,1,1-Trichloroethane	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,1,2-Trichloroethane	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,2,3-Trichloropropane	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,2-Dibromo-3-chloropropane	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,2-Dibromoethane	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,1-Dichloroethane	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,2-Dichloroethane	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,1-Dichloroethene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
cis-1,2-Dichloroethene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
trans-1,2-dichloroethene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,2-Dichloropropane	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,3-Dichloropropane	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
2,2-Dichloropropane	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
1,1-Dichloropropene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
cis-1,3-Dichloropropene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
trans-1,3-dichloropropene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
cis-1,4-Dichloro-2-butene	mg/kg	0.5								<0.5	<0.5	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
trans-1,4-Dichloro-2-butene	mg/kg	0.5								<0.5	<0.5	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Bromochloromethane	mg/kg	1								-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Bromoform	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Bromomethane	mg/kg	5								<5	<5	-	<1	-	-	-	-	-	<5	-	<5	-	<5	-	-
Carbon disulfide	mg/kg	0.5								<0.5	<0.5	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Carbon tetrachloride	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Chlorodibromomethane	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Chloroethane	mg/kg	5								<5	<5	-	<1	-	-	-	-	-	<5	-	<5	-	<5	-	-
Chloroform	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Chloromethane	mg/kg	5								<5	<5	-	<1	-	-	-	-	-	<5	-	<5	-	<5	-	-
Dibromomethane	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Dichlorodifluoromethane	mg/kg	5								<5	<5	-	<1	-	-	-	-	-	<5	-	<5	-	<5	-	-
Hexachlorobutadiene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Iodomethane	mg/kg	0.5								<0.5	<0.5	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Pentachloroethane	mg/kg	0.5								<0.5	<0.5	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Trichloroethene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Tetrachloroethene	mg/kg	0.5								<0.5	<0.5	-	<1	-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-
Trichlorofluoromethane	mg/kg	5								<5	<5	-	<1	-	-	-	-	-	<5	-	<5	-	<5	-	-
Vinyl chloride	mg/kg	5								<5	<5	-	<1	-	-	-	-	-	<5	-	<5	-	<5	-	-
Perfluorinated Compounds																									
10:2 Fluorotelomer sulfonic acid	mg/kg	0.0005								-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-
4:2 Fluorotelomer sulfonic acid	mg/kg	0.0005								-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-
8:2 Fluorotelomer sulfonate	mg/kg	0.0005								-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-
N-Et-FOSA	mg/kg	0.0005								-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-
N-Et-FOSE	mg/kg	0.0005								-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-
N-Me-FOSA	mg/kg	0.0005								-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-
N-Me-FOSE	mg/kg	0.0005								-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid (PFBA)	mg/kg	0.001								-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonic acid	mg/kg	0.0002								-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-pentanoic acid (PFPeA)	mg/kg	0.0002								-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-
Perfluoropentane sulfonic acid	mg/kg	0.0002								-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-
PFDcS	mg/kg	0.0002								-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002								-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-
Sum of PFHxS and PFOS (lab reported)	mg/kg	0.0002	**2** [#2]							-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-

								Location_Code	SRT-BH423	SRT-BH424	SRT-BH424	SRT-BH424	SRT-BH424	SRT-BH424	SRT-BH425	SRT-BH425	SRT-BH425	SRT-BH425	SRT-BH425	SRT-BH426	SRT-BH426	SRT-BH426	SRT-BH426	SRT-BH426
								Sample_Depth_Avg	4.15	0.5	0.5	0.5	1	3	0.15	0.4	0.5	1	2	0.1	0.5	1	2	4
								Sampled_Date_Time	13-10-18	27-10-18	27-10-18	27-10-18	27-10-18	27-10-18	13-10-18	27-10-18	27-10-18	27-10-18	27-10-18	07-10-18	07-10-18	07-10-18	07-10-18	07-10-18
								Field_ID	SRT_BH423_4.15	SRT-BH424-0.5	SRT-QCA108	SRT-QCB108	SRT-BH424-1.0	SRT-BH424-3.0	SRT_BH425_0.15	SRT-BH425-0.4	SRT-BH425-0.5	SRT-BH425-1.0	SRT-BH425-2.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0	SRT_BH426_2.0	SRT_BH426_4.0
			NSW HIL - Residential - Minimal Access to Soil (Residential B)	NEPM 2013 Mgmt Limits - Residential and public open space, Coarse Soil	NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand				Ecological Criteria (EILs and ESLs)																	
ChemName	Units	EQL			0-1m	1-2m	2-4m	>4m																				
Sum of WA DER PFAS (n=10)	mg/kg	0.0002								-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-	-
Sum of PFASs (n=28)	mg/kg	0.0002								-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanesulfonic acid (PFBS)	mg/kg	0.0002								-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002								-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0002								-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002								-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002							1 #10	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanoate (PFOA)	mg/kg	0.0002	20 #2						10 #10	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanesulfonic acid (PFHxS)	mg/kg	0.0002								-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorononanoic acid (PFNA)	mg/kg	0.0002								-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002								-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-	-
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005								-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002								-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonamide (PFOSA)	mg/kg	0.0002								-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005								-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002								-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0002								-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-	-

Notes

#1 – CRC Care (2011) direct contact criteria, residential B
#2 – PFAS National Environmental Management Plan (NEMP), Table 2, criteria for residential with minimal opportunities for soil access
#3 – NL: Non limiting, derived soil HSL exceeds soil saturation concentration
#4 – Most conservative ESLs adopted, coarse soils, urban residential and public open space
#5 – Conservative ESL for xylene adopted, fine soil, urban residential and public open space
#6 – Generic EIL adopted from Table 1B(5) of NEPM (NEPC 2013) for urban residential and public open space
#7 – EILs calculated using site specific soil qualities
#8 – EIL based on copper value specified for lower limit for aged contamination presented in Table A1 of Appendix A, Schedule B5a of NEPM (NEPC 2013)
#9 – Generic EIL adopted from Table 1B(4) of NEPM (NEPC 2013) for urban residential and public open space
#10 – PFAS National Environmental Management Plan (NEMP), Table 3, criteria for public open space (qualified in NEMP)

Data Comments

NAD - no asbestos detected
AD - asbestos detected
* - Asbestos not found at the reporting limit of 0.1 mg/kg by polarised light microscopy including dispersion staining.
Asbestos material was detected and positively identifed as chrysotile, one piece 12 x 9 x 2 mm

| | | |

					Location_Code	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH410	SRT-BH410	SRT-BH410	SRT-BH411	SRT-BH411	SRT-BH411	SRT-BH411	SRT-BH412	SRT-BH412	SRT-BH412
					Sample_Depth_Avg	0.2	0.5	1.5	2	3	0.5	0.5	0.5	1.5	2	3	0.2	0.8	1.5	0.15	0.5	1	2	0.11	0.5	1
					Sampled_Date_Time	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	10-06-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18
					Field_ID	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0	SRT_BH408_3.0	SRT_BH409_0.5	QCA101	QCB101	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH411_0.15	SRT_BH411_0.5	SRT_BH411_1.0	SRT_BH411_2.0	SRT_BH412_0.11	SRT_BH412_0.5	SRT_BH412_1.0
ChemName	Units	EQL	CT1 General Solid Waste	CT2 Restricted Solid Waste	SCC1 / TCLP1 General Solid Waste	SCC2 / TCLP2 Restricted Solid Waste																				
Benzo(a)pyrene TCLP	mg/L	0.5			**0.04**	**0.16**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	1.4	<0.5
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5					0.6	0.6	-	0.6	-	0.6	0.6	<0.5	0.6	-	0.6	0.6	0.6	0.6	-	0.6	0.6	0.6	-	1.8	0.6
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5					1.2	1.2	-	1.2	-	1.2	1.2	<0.5	1.2	-	1.2	1.2	1.2	1.2	-	1.2	1.2	1.2	-	2	1.2
Benzo(b&j)fluoranthene	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	1.2	<0.5
Benzo(g,h,i)perylene	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	0.6	<0.5
Benzo(k)fluoranthene	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5
Chrysene	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	1.2	<0.5
Dibenz(a,h)anthracene	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5
Fluoranthene	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	0.5	<0.5	<0.5	-	3.4	0.8
Fluorene	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5
Naphthalene	mg/kg	0.5					<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5
Phenanthrene	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	2.8	<0.5
Pyrene	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	0.5	<0.5	<0.5	-	3.6	0.8
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5	**200**	**800**			<0.5	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	1	<0.5	<0.5	-	16	1.6
Total PAH (NEPM/WHO 16)	mg/kg	0.05					-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenols																										
Phenolics (Sum of total)	mg/kg	1					-	<1	-	-	-	<1	<1	<5	-	-	-	-	<1	-	-	<1	-	-	<1	-	<1
Polychlorinated Biphenyls																										
Aroclor 1016	mg/kg	0.1					-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1232	mg/kg	0.1					-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1242	mg/kg	0.1					-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1248	mg/kg	0.1					-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1254	mg/kg	0.1					-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1260	mg/kg	0.1					-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1221	mg/kg	0.1					-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-
PCB (Sum of Total-Lab Reported)	mg/kg	0.1	**<50**	**<50**			-	<0.1	-	-	-	<0.1	<0.1	<0.1	-	-	-	-	<0.1	-	-	<0.1	-	-	<0.1	-	**0.1**
Volatile Organic Compounds																										
1,4-Dichlorobenzene	mg/kg	0.5	**150**	**600**			-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
4-Chlorotoluene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
Cyclohexane	mg/kg	1					-	-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichlorobenzene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.5	**<50[#1]**	**<50[#1]**			-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.5	**86**	**344**			-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
2-Chlorotoluene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
Bromobenzene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
Chlorobenzene	mg/kg	0.5	**2000**	**8000**			-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
1,2,4-trimethylbenzene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
1,3,5-Trimethylbenzene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
Isopropylbenzene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
n-Butylbenzene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
n-Propylbenzene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
p-Isopropyltoluene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
sec-Butylbenzene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
Styrene	mg/kg	0.5	**60**	**240**			-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
tert-Butylbenzene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
Methyl Ethyl Ketone	mg/kg	5	**4000**	**16000**			-	<5	<5	-	<5	<5	<5	-	-	<5	-	-	-	<5	-	-	-	-	-	-	-
2-Hexanone	mg/kg	5					-	<5	<5	-	<5	<5	<5	-	-	<5	-	-	-	<5	-	-	-	-	-	-	-
Methyl iso-butyl ketone	mg/kg	5					-	<5	<5	-	<5	<5	<5	-	-	<5	-	-	-	<5	-	-	-	-	-	-	-
Vinyl acetate	mg/kg	5					-	<5	<5	-	<5	<5	<5	-	-	<5	-	-	-	<5	-	-	-	-	-	-	-
1,1,1,2-Tetrachloroethane	mg/kg	0.5	**200**	**800**			-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	mg/kg	0.5	**26**	**104**			-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
1,1,1-Trichloroethane	mg/kg	0.5	**600**	**2400**			-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
1,1,2-Trichloroethane	mg/kg	0.5	**24**	**96**			-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
1,2,3-Trichloropropane	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
1,2-Dibromoethane	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
1,1-Dichloroethane	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
1,2-Dichloroethane	mg/kg	0.5	**10**	**40**			-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
1,1-Dichloroethene	mg/kg	0.5	**14**	**56**			-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
trans-1,2-dichloroethene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
1,2-Dichloropropane	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
1,3-Dichloropropane	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
2,2-Dichloropropane	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
1,1-Dichloropropene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
trans-1,3-dichloropropene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
cis-1,4-Dichloro-2-butene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
trans-1,4-Dichloro-2-butene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
Bromochloromethane	mg/kg	1					-	-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
Bromoform	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
Bromomethane	mg/kg	5					-	<5	<5	-	<5	<5	<5	<1	-	<5	-	-	-	<5	-	-	-	-	-	-	-
Carbon disulfide	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
Carbon tetrachloride	mg/kg	0.5	**10**	**40**			-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
Chlorodibromomethane	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
Chloroethane	mg/kg	5					-	<5	<5	-	<5	<5	<5	<1	-	<5	-	-	-	<5	-	-	-	-	-	-	-
Chloroform	mg/kg	0.5	**120**	**480**			-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
Chloromethane	mg/kg	5					-	<5	<5	-	<5	<5	<5	<1	-	<5	-	-	-	<5	-	-	-	-	-	-	-
Dibromomethane	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
Dichlorodifluoromethane	mg/kg	5					-	<5	<5	-	<5	<5	<5	<1	-	<5	-	-	-	<5	-	-	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
Iodomethane	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
Pentachloroethane	mg/kg	0.5					-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
Trichloroethene	mg/kg	0.5	**10**	**40**			-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
Tetrachloroethene	mg/kg	0.5	**14**	**56**			-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1	-	<0.5	-	-	-	<0.5	-	-	-	-	-	-	-
Trichlorofluoromethane	mg/kg	5					-	<5	<5	-	<5	<5	<5	<1	-	<5	-	-	-	<5	-	-	-	-	-	-	-
Vinyl chloride	mg/kg	5	**4**	**16**			-	<5	<5	-	<5	<5	<5	<1	-	<5	-	-	-	<5	-	-	-	-	-	-	-
Perfluorinated Compounds																										
10:2 Fluorotelomer sulfonic acid	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

					Location_Code	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH409	SRT-BH410	SRT-BH410	SRT-BH410	SRT-BH411	SRT-BH411	SRT-BH411	SRT-BH411	SRT-BH412	SRT-BH412	SRT-BH412
					Sample_Depth_Avg	0.2	0.5	1.5	2	3	0.5	0.5	0.5	1.5	2	3	0.2	0.8	1.5	0.15	0.5	1	2	0.11	0.5	1
					Sampled_Date_Time	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	10-06-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18
					Field_ID	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0	SRT_BH408_3.0	SRT_BH409_0.5	QCA101	QCB101	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH411_0.15	SRT_BH411_0.5	SRT_BH411_1.0	SRT_BH411_2.0	SRT_BH412_0.11	SRT_BH412_0.5	SRT_BH412_1.0
ChemName	Units	EQL	CT1 General Solid Waste	CT2 Restricted Solid Waste	SCC1 / TCLP1 General Solid Waste	SCC2 / TCLP2 Restricted Solid Waste																				
4:2 Fluorotelomer sulfonic acid	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8:2 Fluorotelomer sulfonate	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Et-FOSA	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Et-FOSE	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Me-FOSA	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Me-FOSE	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid (PFBA)	mg/kg	0.001					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonic acid	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-pentanoic acid (PFPeA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentane sulfonic acid	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PFDcS	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum of PFHxS and PFOS (lab reported)	mg/kg	0.0002			**1.8**	**7.2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum of PFHxS and PFOS (TCLP)	µg/L	0.01			**0.05**	**0.2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum of WA DER PFAS (n=10)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum of PFASs (n=28)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanesulfonic acid (PFBS)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanoate (PFOA)	mg/kg	0.0002			**18**	**72**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanoate (PFOA)	µg/L	0.01			**0.5**	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanesulfonic acid (PFHxS)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorononanoic acid (PFNA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonamide (PFOSA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Env Stds Comments
#1:Criteria of <50 mg/kg for sum of all Scheduled Chemicals
#2:Total concentration of Moderately Harmful Pesticides <250 mg/kg for CT1 and <1000 mg/kg for CT2

AD: Asbestos detected
NAD: No asbestos detected
NFD: No fibres detected
Ch: Chrysotile (white asbestos)

						Location_Code	SRT-BH412	SRT-BH413A	SRT-BH413A	SRT-BH413A	SRT-BH414	SRT-BH415	SRT-BH415	SRT-BH415	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH418	SRT-BH418	SRT-BH418	SRT-BH418	SRT-BH419
						Sample_Depth_Avg	2	0.5	1.5	3	0.4	0.5	0.5	0.5	0.25	0.5	1	1.5	3	0.5	1.5	2	3	0.2	1	1	1	0.25
						Sampled_Date_Time	06-10-18	28-10-18	28-10-18	28-10-18	13-10-18	20-10-18	20-10-18	20-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	27-10-18	27-10-18	27-10-18	27-10-18	13-10-18
						Field_ID	SRT_BH412_2.0	SRT-BH413A-0.5	SRT-BH413A-1.5	SRT-BH413A-3.0	SRT-BH414_0.4	SRT-BH415-0.5	SRT-QCA106	QCB106	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT-BH418-0.2	SRT-BH418-1.0	SRT-QCA109	SRT-QCB109	SRT-BH419_0.25
ChemName	**Units**	**EQL**	CT1 General Solid Waste	CT2 Restricted Solid Waste	SCC1 / TCLP1 General Solid Waste	SCC2 / TCLP2 Restricted Solid Waste																						
Asbestos																												
Asbestos in soil (>7mm ACM)	%w/w	0.01					-	<0.01	-	-	<0.01	<0.01	-	-	<0.01	-	<0.01	-	-	<0.01	-	-	-	<0.01	<0.01	-	-	-
Asbestos in soil (<7mm AF/FA)	%w/w	0.001					-	<0.001	-	-	<0.001	<0.001	-	-	<0.001	-	<0.001	-	-	<0.001	-	-	-	<0.001	<0.001	-	-	-
Weight Asbestos in soil (>7mm ACM)	g	0.1					-	<0.1	-	-	<0.1	<0.1	-	-	<0.1	-	<0.1	-	-	<0.1	-	-	-	<0.1	<0.1	-	-	-
Weight Asbestos in soil (<7mm AF/FA)	g	0.0004					-	<0.0004	-	-	<0.0004	<0.0004	-	-	<0.0004	-	<0.0004	-	-	<0.0004	-	-	-	<0.0004	<0.0004	-	-	-
Asbestos Type	No						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos Detected	No	0.1					-	NAD	-	-	NAD	NAD	-	-	NAD	-	NAD	-	-	NAD	-	-	-	NAD	NAD	-	-	-
Asbestos Fibres Detected	Fibres	5					-	NFD	-	-	NFD	NFD	-	-	NFD	-	NFD	-	-	NFD	-	-	-	NFD	NFD	-	-	-
Fibrous Asbestos >7mm	mg/kg	0.0004					-	<0.0004	-	-	<0.0004	<0.0004	-	-	<0.0004	-	<0.0004	-	-	<0.0004	-	-	-	<0.0004	<0.0004	-	-	-
Mass of test sample	g	0.1					-	521	-	-	620	520	-	-	532	-	408	-	-	486	-	-	-	517	638	-	-	-
Sample weight (dry)	g	0.01					-	521	-	-	620	520	-	-	532	-	408	-	-	486	-	-	-	517	638	-	-	-
TPH Group																												
TRH C6 - C9 Fraction	mg/kg	10	**650**	**2600**			<10	<10	<10	<10	<10	<10	<10	<25	<10	<10	-	<10	<10	<10	<10	-	<10	<10	<10	<10	<25	<10
TRH C10 - C14 Fraction	mg/kg	50					<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	-	<50	<50	<50	<50	-	<50	<50	<50	<50	<50	<50
TRH C15 - C28 Fraction	mg/kg	100					<100	<100	<100	<100	320	<100	<100	<100	<100	<100	-	<100	<100	<100	<100	-	<100	100	<100	<100	<100	<100
TRH C29 - C36 Fraction	mg/kg	100					<100	<100	<100	<100	180	<100	<100	<100	<100	<100	-	<100	<100	<100	<100	-	<100	130	<100	<100	<100	<100
TRH+C10 - C36 (Sum of total) (Lab Reported)	mg/kg	50	**10000**	**40000**			<50	<50	<50	<50	500	<50	<50	-	<50	<50	-	<50	<50	<50	<50	-	<50	230	<50	<50	-	<50
BTEX																												
Benzene	mg/kg	0.2	**10**	**40**			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	0.5	**288**	**1152**			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	0.5	**600**	**2400**			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
Xylenes (m & p)	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5
Xylene (o)	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5	**1000**	**4000**			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<1	<0.5
Total BTEX	mg/kg	0.2					<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2
Heavy Metals																												
Arsenic	mg/kg	5	**100**	**400**			<5	10	<5	<5	<5	<5	<5	<4	6	<5	-	<5	<5	<5	<5	-	<5	<5	<5	<5	<4	<5
Cadmium	mg/kg	1	**20**	**80**			<1	<1	<1	<1	<1	<1	<1	<0.4	6	<1	-	<1	<1	<1	<1	-	<1	<1	<1	<1	<0.4	<1
Chromium	mg/kg	2	**100**	**400**			5	8	3	<2	48	7	7	7	20	7	-	<2	<2	15	22	-	2	11	<2	<2	<1	10
Copper	mg/kg	5					<5	72	<5	<5	16	<5	<5	5	28	40	-	<5	<5	32	5	-	<5	63	<5	11	1	27
Lead	mg/kg	5	**100**	**400**	**1500**	**6000**	<5	580	11	<5	976	16	14	19	813	**276**	-	7	<5	30	9	-	<5	<5	<5	250	7	31
Lead TCLP	mg/L	0.1			**5**	**20**	-	0.4	-	-	**5.6**	-	-	-	**6.8**	-	-	-	-	-	-	-	-	-	-	0.2	-	-
Mercury	mg/kg	0.1	**4**	**16**	**50**	**200**	<0.1	1.3	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.2	1.6	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	0.1	<0.1	<0.1
Mercury TCLP	mg/L	0.001			**0.2**	**0.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	mg/kg	2	**40**	**160**			4	10	<2	<2	17	3	3	4	3	5	-	<2	<2	23	<2	-	<2	30	<2	<2	<1	6
Zinc	mg/kg	5					69	314	10	<5	160	20	21	21	2100	227	-	6	14	265	11	-	8	36	<5	85	8	58
Organochlorine Pesticides																												
a-BHC	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Aldrin	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Dieldrin	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	0.1
Aldrin & Dieldrin (Sum of total) (Lab Reported)	mg/kg	0.05					-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	0.1
b-BHC	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
cis-Chlordane	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
trans-Chlordane	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Chlordane (Sum of total)	mg/kg	0.05					-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
d-BHC	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
DDD	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
DDE	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
DDT	mg/kg	0.2	**<50**[#1]	**<50**[#1]			-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.1	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-	-	-	<0.2
DDT+DDE+DDD (Sum of total) (Lab Reported)	mg/kg	0.05					-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Endosulfan	mg/kg	0.05	**60**	**240**			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Endosulfan I	mg/kg	0.05					-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Endosulfan II	mg/kg	0.05					-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Endosulfan sulphate	mg/kg	0.05					-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Endrin	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Endrin aldehyde	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Endrin ketone	mg/kg	0.05					-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
g-BHC	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Heptachlor	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Heptachlor epoxide	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Hexachlorobenzene	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Methoxychlor	mg/kg	0.2					-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.1	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-	-	-	<0.2
Organophosphorous Pesticides																												
Azinphos-methyl	mg/kg	0.05					-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Bromophos-ethyl	mg/kg	0.05					-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Carbophenothion	mg/kg	0.05					-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Chlorfenvinphos	mg/kg	0.05					-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Chlorpyriphos	mg/kg	0.05	**4**	**16**			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Chlorpyriphos-methyl	mg/kg	0.05					-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Demeton-s-methyl	mg/kg	0.05					-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Diazinon	mg/kg	0.05					-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Dichlorvos	mg/kg	0.05	**250**[#2]	**1000**[#2]			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Dimethoate	mg/kg	0.05	**250**[#2]	**1000**[#2]			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Ethion	mg/kg	0.05	**250**[#2]	**1000**[#2]			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Fenamiphos	mg/kg	0.05					-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Fenitrothion	mg/kg	0.1	**250**[#2]	**1000**[#2]			-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenthion	mg/kg	0.05	**250**[#2]	**1000**[#2]			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Malathion	mg/kg	0.05	**250**[#2]	**1000**[#2]			-	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.1	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Parathion-methyl	mg/kg	0.2	**250**[#2]	**1000**[#2]			-	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-	-	-	<0.2
Monocrotophos	mg/kg	0.2					-	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-	-	-	<0.2
Parathion	mg/kg	0.2					-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.1	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-	-	-	<0.2
Pirimphos-ethyl	mg/kg	0.05					-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Prothiofos	mg/kg	0.05					-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-	<0.05
Ronnel	mg/kg	0.1					-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PAHs																												
Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2					-	-	-	-	-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	0.3	-
Acenaphthene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5
Acenaphthylene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	5.8	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5
Anthracene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	5.1	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5
Benz(a)anthracene	mg/kg	0.5					<0.5	0.6	<0.5	<0.5	6.7	<0.5	<0.5	<0.1	0.5	0.8	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	0.2	0.6
Benzo(a)pyrene	mg/kg	0.5	**0.8**	**3.2**	**10**	**23**	<0.5	0.6	<0.5	<0.5	5.9	<0.5	<0.5	0.06	0.6	0.8	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	0.2	0.6

ChemName	Units	EQL	CT1 General Solid Waste	CT2 Restricted Solid Waste	SCC1 / TCLP1 General Solid Waste	SCC2 / TCLP2 Restricted Solid Waste	Location_Code	SRT-BH412	SRT-BH413A	SRT-BH413A	SRT-BH413A	SRT-BH414	SRT-BH415	SRT-BH415	SRT-BH415	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH418	SRT-BH418	SRT-BH418	SRT-BH418	SRT-BH419
							Sample_Depth_Avg	2	0.5	1.5	3	0.4	0.5	0.5	0.5	0.25	0.5	1	1.5	3	0.5	1.5	2	3	0.2	1	1	1	0.25
							Sampled_Date_Time	06-10-18	28-10-18	28-10-18	28-10-18	13-10-18	20-10-18	20-10-18	20-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	27-10-18	27-10-18	27-10-18	27-10-18	13-10-18
							Field_ID	SRT_BH412_2.0	SRT-BH413A-0.5	SRT-BH413A-1.5	SRT-BH413A-3.0	SRT-BH414_0.4	SRT-BH415-0.5	SRT-QCA106	QCB106	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT-BH418-0.2	SRT-BH418-1.0	SRT-QCA109	SRT-QCB109	SRT-BH419_0.25
Benzo(a)pyrene TCLP	mg/L	0.5			0.04	0.16		-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5						<0.5	0.7	<0.5	<0.5	8.8	<0.5	<0.5	<0.5	0.7	1	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.7
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5						0.6	1	0.6	0.6	8.8	0.6	0.6	<0.5	1	1.3	-	0.6	0.6	0.6	0.6	-	0.6	0.6	0.6	0.6	<0.5	1
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5						1.2	1.3	1.2	1.2	8.8	1.2	1.2	<0.5	1.3	1.6	-	1.2	1.2	1.2	1.2	-	1.2	1.2	1.2	1.2	<0.5	1.3
Benzo(b&j)fluoranthene	mg/kg	0.5						<0.5	0.7	<0.5	<0.5	6.6	<0.5	<0.5	-	0.7	0.8	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	0.6
Benzo(g,h,i)perylene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	3.3	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	0.1	<0.5
Benzo(k)fluoranthene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	3	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5
Chrysene	mg/kg	0.5						<0.5	0.6	<0.5	<0.5	5.4	<0.5	<0.5	<0.1	0.5	0.7	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	0.2	0.5
Dibenz(a,h)anthracene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5
Fluoranthene	mg/kg	0.5						<0.5	0.9	<0.5	<0.5	17.8	<0.5	<0.5	0.1	1.1	1.7	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.9	0.3	1.6
Fluorene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	3.4	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	2.7	<0.5	<0.5	<0.1	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	0.1	<0.5
Naphthalene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<1 - 1.2	<0.5	<0.5	<0.1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5
Phenanthrene	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	20	<0.5	<0.5	<0.1	<0.5	1	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	0.2	1.1
Pyrene	mg/kg	0.5						<0.5	1	<0.5	<0.5	15.4	<0.5	<0.5	0.1	1.2	1.7	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.9	0.3	1.7
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5	200	800				<0.5	4.4	<0.5	<0.5	104	<0.5	<0.5	-	4.6	7.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	1.8	-	6.7
Total PAH (NEPM/WHO 16)	mg/kg	0.05						-	-	-	-	-	-	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	2.1	-
Phenols																													
Phenolics (Sum of total)	mg/kg	1						-	<1	<1	-	<1	<1	<1	<5	-	<1	-	-	-	<1	<1	-	-	-	<1	-	-	-
Polychlorinated Biphenyls																													
Aroclor 1016	mg/kg	0.1						-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1232	mg/kg	0.1						-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1242	mg/kg	0.1						-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1248	mg/kg	0.1						-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1254	mg/kg	0.1						-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1260	mg/kg	0.1						-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1221	mg/kg	0.1						-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCB (Sum of Total-Lab Reported)	mg/kg	0.1	<50	<50				-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	-	<0.1	<0.1	-	-	-	<0.1	-	-	<0.1
Volatile Organic Compounds																													
1,4-Dichlorobenzene	mg/kg	0.5	150	600				-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
4-Chlorotoluene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Cyclohexane	mg/kg	1						-	-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichlorobenzene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.5	<50[#1]	<50[#1]				-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.5	86	344				-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
2-Chlorotoluene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Bromobenzene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Chlorobenzene	mg/kg	0.5	2000	8000				-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
1,2,4-trimethylbenzene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
1,3,5-Trimethylbenzene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Isopropylbenzene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
n-Butylbenzene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
n-Propylbenzene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
p-Isopropyltoluene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
sec-Butylbenzene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Styrene	mg/kg	0.5	60	240				-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
tert-Butylbenzene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Methyl Ethyl Ketone	mg/kg	5	4000	16000				-	<5	-	-	<5	<5	<5	-	<5	-	<5	-	<5	<5	-	<5	<5	<5	<5	-	-	-	-
2-Hexanone	mg/kg	5						-	<5	-	-	<5	<5	<5	-	<5	-	<5	-	<5	<5	-	<5	<5	<5	<5	-	-	-	-
Methyl iso-butyl ketone	mg/kg	5						-	<5	-	-	<5	<5	<5	-	<5	-	<5	-	<5	<5	-	<5	<5	<5	<5	-	-	-	-
Vinyl acetate	mg/kg	5						-	<5	-	-	<5	<5	<5	-	<5	-	<5	-	<5	<5	-	<5	<5	<5	<5	-	-	-	-
1,1,1,2-Tetrachloroethane	mg/kg	0.5	200	800				-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
1,1,2,2-Tetrachloroethane	mg/kg	0.5	26	104				-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
1,1,1-Trichloroethane	mg/kg	0.5	600	2400				-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
1,1,2-Trichloroethane	mg/kg	0.5	24	96				-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
1,2,3-Trichloropropane	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
1,2-Dibromo-3-chloropropane	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
1,2-Dibromoethane	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
1,1-Dichloroethane	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
1,2-Dichloroethane	mg/kg	0.5	10	40				-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
1,1-Dichloroethene	mg/kg	0.5	14	56				-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
cis-1,2-Dichloroethene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
trans-1,2-dichloroethene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
1,2-Dichloropropane	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
1,3-Dichloropropane	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
2,2-Dichloropropane	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
1,1-Dichloropropene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
cis-1,3-Dichloropropene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
trans-1,3-dichloropropene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
cis-1,4-Dichloro-2-butene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
trans-1,4-Dichloro-2-butene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Bromochloromethane	mg/kg	1						-	-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Bromoform	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Bromomethane	mg/kg	5						-	<5	-	-	<5	<5	<5	<1	<5	-	<5	-	<5	<5	-	<5	<5	<5	<5	-	-	-	-
Carbon disulfide	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Carbon tetrachloride	mg/kg	0.5	10	40				-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Chlorodibromomethane	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Chloroethane	mg/kg	5						-	<5	-	-	<5	<5	<5	<1	<5	-	<5	-	<5	<5	-	<5	<5	<5	<5	-	-	-	-
Chloroform	mg/kg	0.5	120	480				-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Chloromethane	mg/kg	5						-	<5	-	-	<5	<5	<5	<1	<5	-	<5	-	<5	<5	-	<5	<5	<5	<5	-	-	-	-
Dibromomethane	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Dichlorodifluoromethane	mg/kg	5						-	<5	-	-	<5	<5	<5	<1	<5	-	<5	-	<5	<5	-	<5	<5	<5	<5	-	-	-	-
Hexachlorobutadiene	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Iodomethane	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Pentachloroethane	mg/kg	0.5						-	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Trichloroethene	mg/kg	0.5	10	40				-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Tetrachloroethene	mg/kg	0.5	14	56				-	<0.5	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Trichlorofluoromethane	mg/kg	5						-	<5	-	-	<5	<5	<5	<1	<5	-	<5	-	<5	<5	-	<5	<5	<5	<5	-	-	-	-
Vinyl chloride	mg/kg	5	4	16				-	<5	-	-	<5	<5	<5	<1	<5	-	<5	-	<5	<5	-	<5	<5	<5	<5	-	-	-	-
Perfluorinated Compounds																													
10:2 Fluorotelomer sulfonic acid	mg/kg	0.0005						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

					Location_Code	SRT-BH412	SRT-BH413A	SRT-BH413A	SRT-BH413A	SRT-BH414	SRT-BH415	SRT-BH415	SRT-BH415	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH416	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH418	SRT-BH418	SRT-BH418	SRT-BH418	SRT-BH419
					Sample_Depth_Avg	2	0.5	1.5	3	0.4	0.5	0.5	0.5	0.25	0.5	1	1.5	3	0.5	1.5	2	3	0.2	1	1	1	0.25
					Sampled_Date_Time	06-10-18	28-10-18	28-10-18	28-10-18	13-10-18	20-10-18	20-10-18	20-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	27-10-18	27-10-18	27-10-18	27-10-18	13-10-18
					Field_ID	SRT_BH412_2.0	SRT-BH413A-0.5	SRT-BH413A-1.5	SRT-BH413A-3.0	SRT-BH414_0.4	SRT-BH415-0.5	SRT-QCA106	QCB106	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT-BH418-0.2	SRT-BH418-1.0	SRT-QCA109	SRT-QCB109	SRT-BH419_0.25
ChemName	**Units**	**EQL**	CT1 General Solid Waste	CT2 Restricted Solid Waste	SCC1 / TCLP1 General Solid Waste	SCC2 / TCLP2 Restricted Solid Waste																						
4:2 Fluorotelomer sulfonic acid	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8:2 Fluorotelomer sulfonate	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Et-FOSA	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Et-FOSE	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Me-FOSA	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Me-FOSE	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid (PFBA)	mg/kg	0.001					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonic acid	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-pentanoic acid (PFPeA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentane sulfonic acid	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PFDcS	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum of PFHxS and PFOS (lab reported)	mg/kg	0.0002			**1.8**	**7.2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum of PFHxS and PFOS (TCLP)	µg/L	0.01			**0.05**	**0.2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum of WA DER PFAS (n=10)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum of PFASs (n=28)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanesulfonic acid (PFBS)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanoate (PFOA)	mg/kg	0.0002			**18**	**72**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanoate (PFOA)	µg/L	0.01			**0.5**	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanesulfonic acid (PFHxS)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorononanoic acid (PFNA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonamide (PFOSA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Env Stds Comments
#1:Criteria of <50 mg/kg for sum of all Scheduled Chemicals
#2:Total concentration of Moderately Harmful Pesticides <250 mg/kg for CT1 and <1000 mg/kg for CT2

AD: Asbestos detected
NAD: No asbestos detected
NFD: No fibres detected
Ch: Chrysotile (white asbestos)

ChemName	Units	EQL	CT1 General Solid Waste	CT2 Restricted Solid Waste	SCC1 / TCLP1 General Solid Waste	SCC2 / TCLP2 Restricted Solid Waste																							
Location_Code							SRT-BH419	SRT-BH419	SRT-BH419	SRT-BH419	SRT-BH420	SRT-BH420	SRT-BH420	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH423	SRT-BH423	SRT-BH423	SRT-BH424
Sample_Depth_Avg							1	1	1	1.05	0.5	1	2	0.25	0.5	0.5	0.5	1	3	0.5	1	1	1	1.5	0.5	2	4.15	0.5
Sampled_Date_Time							13-10-18	13-10-18	13-10-18	20-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	10-06-18	06-10-18	06-10-18	07-10-18	07-10-18	06-10-18	10-07-18	07-10-18	13-10-18	13-10-18	13-10-18	27-10-18
Field_ID							SRT-BH419_1.0	SRT_QCA104	QCB104	SRT-BH419-1.05	SRT-BH420-0.5	SRT-BH420-1.0	SRT-BH420-2.0	SRT_BH421_0.25	SRT_BH421_0.5	QCA102	QCB102	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0	QCA103	QCB103	SRT_BH422_1.5	SRT-BH423_0.5	SRT-BH423_2.0	SRT_BH423_4.15	SRT-BH424-0.5
Asbestos																													
Asbestos in soil (>7mm ACM)	%w/w	0.01					<0.01	-	-	<0.01	<0.01	-	-	<0.01	-	-	-	-	-	<0.01	-	-	-	-	<0.01	-	-	<0.01
Asbestos in soil (<7mm AF/FA)	%w/w	0.001					<0.001	-	-	<0.001	<0.001	-	-	<0.001	-	-	-	-	-	<0.001	-	-	-	-	<0.001	-	-	<0.001
Weight Asbestos in soil (>7mm ACM)	g	0.1					<0.1	-	-	<0.1	0.7	-	-	<0.1	-	-	-	-	-	<0.1	-	-	-	-	<0.1	-	-	<0.1
Weight Asbestos in soil (<7mm AF/FA)	g	0.0004					<0.0004	-	-	<0.0004	<0.0004	-	-	<0.0004	-	-	-	-	-	<0.0004	-	-	-	-	<0.0004	-	-	<0.0004
Asbestos Type	No						-	-	-	-	Ch	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos Detected	No	0.1					NAD	-	NAD	NAD	**AD**	-	-	NAD	-	-	-	-	-	NAD	-	-	-	-	NAD	-	-	NAD
Asbestos Fibres Detected	Fibres	5					NFD	-	-	NFD	NFD	-	-	NFD	-	-	-	-	-	NFD	-	-	-	-	NFD	-	-	NFD
Fibrous Asbestos >7mm	mg/kg	0.0004					<0.0004	-	-	<0.0004	<0.0004	-	-	<0.0004	-	-	-	-	-	<0.0004	-	-	-	-	<0.0004	-	-	<0.0004
Mass of test sample	g	0.1					667	-	-	557	1090	-	-	658	-	-	-	-	-	577	-	-	-	-	287	-	-	706
Sample weight (dry)	g	0.01					667	-	-	557	1090	-	-	658	-	-	-	-	-	577	-	-	-	-	287	-	-	706
TPH Group																													
TRH C6 - C9 Fraction	mg/kg	10	**650**	**2600**			<10	<10	<25	<10	<10	<10	<10	-	<10	<10	<25	<10	<10	<10	<10	<10	<25	<10	<10	<10	<10	<10
TRH C10 - C14 Fraction	mg/kg	50					<50	<50	<50	<50	<50	<50	<50	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
TRH C15 - C28 Fraction	mg/kg	100					<100	<100	<100	<100	<100	<100	<100	-	120	130	170	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
TRH C29 - C36 Fraction	mg/kg	100					<100	<100	<100	<100	<100	<100	<100	-	200	200	170	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
TRH+C10 - C36 (Sum of total) (Lab Reported)	mg/kg	50	**10000**	**40000**			<50	<50	-	<50	<50	<50	<50	-	320	330	-	<50	<50	<50	<50	<50	-	<50	<50	<50	<50	<50
BTEX																													
Benzene	mg/kg	0.2	**10**	**40**			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	0.5	**288**	**1152**			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	0.5	**600**	**2400**			<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenes (m & p)	mg/kg	0.5					<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (o)	mg/kg	0.5					<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5	**1000**	**4000**			<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5
Total BTEX	mg/kg	0.2					<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2
Heavy Metals																													
Arsenic	mg/kg	5	**100**	**400**			<5	<5	<4	<5	11	9	<5	-	<5	<5	<4	<5	<5	<5	<5	<5	<4	<5	9	<5	<5	<5
Cadmium	mg/kg	1	**20**	**80**			<1	<1	<0.4	<1	2	<1	<1	-	<1	<1	<0.4	<1	<1	<1	<1	<1	<0.4	<1	<1	<1	<1	<1
Chromium	mg/kg	2	**100**	**400**			10	10	10	7	9	12	<2	-	12	9	10	3	<2	3	<2	<2	<1	<2	13	<2	<2	3
Copper	mg/kg	5					38	32	40	27	76	78	<5	-	20	19	28	<5	<5	30	<5	<5	1	5	58	<5	<5	10
Lead	mg/kg	5	**100**	**400**	**1500**	**6000**	23	28	20	64	**618**	**628**	15	-	22	23	16	<5	<5	261	31	<5	7	29	250	7	<5	186
Lead TCLP	mg/L	0.1			**5**	**20**	-	-	-	-	-	**1.1**	-	-	-	-	-	-	-	0.1	-	-	-	-	0.2	-	-	<0.1
Mercury	mg/kg	0.1	**4**	**16**	**50**	**200**	<0.1	<0.1	0.1	<0.1	0.6	**5.8**	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	0.2
Mercury TCLP	mg/L	0.001			**0.2**	**0.8**	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	mg/kg	2	**40**	**160**			6	6	5	3	8	10	<2	-	10	6	8	<2	<2	3	<2	<2	<1	<2	8	<2	<2	<2
Zinc	mg/kg	5					64	65	63	91	804	481	17	-	48	53	36	<5	18	150	47	13	12	108	500	<5	6	75
Organochlorine Pesticides																													
a-BHC	mg/kg	0.05	**<50**[#1]	**<50**[#1]			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Aldrin	mg/kg	0.05	**<50**[#1]	**<50**[#1]			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Dieldrin	mg/kg	0.05	**<50**[#1]	**<50**[#1]			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Aldrin & Dieldrin (Sum of total) (Lab Reported)	mg/kg	0.05					<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
b-BHC	mg/kg	0.05	**<50**[#1]	**<50**[#1]			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
cis-Chlordane	mg/kg	0.05	**<50**[#1]	**<50**[#1]			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
trans-Chlordane	mg/kg	0.05	**<50**[#1]	**<50**[#1]			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Chlordane (Sum of total)	mg/kg	0.05					<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
d-BHC	mg/kg	0.05	**<50**[#1]	**<50**[#1]			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
DDD	mg/kg	0.05	**<50**[#1]	**<50**[#1]			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
DDE	mg/kg	0.05	**<50**[#1]	**<50**[#1]			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
DDT	mg/kg	0.2	**<50**[#1]	**<50**[#1]			<0.2	-	-	<0.2	<0.2	-	-	<0.2	-	-	-	-	-	<0.2	-	-	-	-	<0.2	-	-	<0.2
DDT+DDE+DDD (Sum of total) (Lab Reported)	mg/kg	0.05					<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Endosulfan	mg/kg	0.05	**60**	**240**			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Endosulfan I	mg/kg	0.05					<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Endosulfan II	mg/kg	0.05					<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Endosulfan sulphate	mg/kg	0.05					<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Endrin	mg/kg	0.05	**<50**[#1]	**<50**[#1]			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Endrin aldehyde	mg/kg	0.05	**<50**[#1]	**<50**[#1]			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Endrin ketone	mg/kg	0.05					<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
g-BHC	mg/kg	0.05	**<50**[#1]	**<50**[#1]			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Heptachlor	mg/kg	0.05	**<50**[#1]	**<50**[#1]			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Heptachlor epoxide	mg/kg	0.05	**<50**[#1]	**<50**[#1]			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Hexachlorobenzene	mg/kg	0.05	**<50**[#1]	**<50**[#1]			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Methoxychlor	mg/kg	0.2					<0.2	-	-	<0.2	<0.2	-	-	<0.2	-	-	-	-	-	<0.2	-	-	-	-	<0.2	-	-	<0.2
Organophosphorous Pesticides																													
Azinphos-methyl	mg/kg	0.05					<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Bromophos-ethyl	mg/kg	0.05					<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Carbophenothion	mg/kg	0.05					<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Chlorfenvinphos	mg/kg	0.05					<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Chlorpyriphos	mg/kg	0.05	**4**	**16**			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Chlorpyriphos-methyl	mg/kg	0.05					<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Demeton-s-methyl	mg/kg	0.05					<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Diazinon	mg/kg	0.05					<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Dichlorvos	mg/kg	0.05	**250**[#2]	**1000**[#2]			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Dimethoate	mg/kg	0.05	**250**[#2]	**1000**[#2]			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Ethion	mg/kg	0.05	**250**[#2]	**1000**[#2]			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Fenamiphos	mg/kg	0.05					<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Fenitrothion	mg/kg	0.1	**250**[#2]	**1000**[#2]			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenthion	mg/kg	0.05	**250**[#2]	**1000**[#2]			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Malathion	mg/kg	0.05	**250**[#2]	**1000**[#2]			<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Parathion-methyl	mg/kg	0.2	**250**[#2]	**1000**[#2]			<0.2	-	-	<0.2	<0.2	-	-	<0.2	-	-	-	-	-	<0.2	-	-	-	-	<0.2	-	-	<0.2
Monocrotophos	mg/kg	0.2					<0.2	-	-	<0.2	<0.2	-	-	<0.2	-	-	-	-	-	<0.2	-	-	-	-	<0.2	-	-	<0.2
Parathion	mg/kg	0.2					<0.2	-	-	<0.2	<0.2	-	-	<0.2	-	-	-	-	-	<0.2	-	-	-	-	<0.2	-	-	<0.2
Pirimphos-ethyl	mg/kg	0.05					<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Prothiofos	mg/kg	0.05					<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	<0.05	-	-	<0.05
Ronnel	mg/kg	0.1					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PAHs																													
Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2					-	-	<0.2	-	-	-	-	-	-	-	1	-	-	-	-	-	<0.2	-	-	-	-	-
Acenaphthene	mg/kg	0.5					<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	mg/kg	0.5					<0.5	<0.5	<0.1	0.6	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	mg/kg	0.5					<0.5	<0.5	<0.1	1.9	<0.5	<0.5	<0.5	-	<0.5	0.6	0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	mg/kg	0.5					<0.5	<0.5	0.2	3	0.6	<0.5	<0.5	-	0.8	1	0.9	<0.5	<0.5	1.4	<0.5	0.6	<0.1	0.9	1.7	<0.5	<0.5	<0.5
Benzo(a)pyrene	mg/kg	0.5	**0.8**	**3.2**	**10**	**23**	<0.5	<0.5	0.1	**2.5**	0.8	<0.5	<0.5	-	0.8	**1**	**0.85**	<0.5	<0.5	1.4	<0.5	0.6	0.06	**0.9**	**2**	<0.5	<0.5	<0.5

ChemName	Units	EQL	CT1 General Solid Waste	CT2 Restricted Solid Waste	SCC1 / TCLP1 General Solid Waste	SCC2 / TCLP2 Restricted Solid Waste	Location_Code	SRT-BH419	SRT-BH419	SRT-BH419	SRT-BH419	SRT-BH420	SRT-BH420	SRT-BH420	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH423	SRT-BH423	SRT-BH423	SRT-BH424
							Sample_Depth_Avg	1	1	1	1.05	0.5	1	2	0.25	0.5	0.5	0.5	1	3	0.5	1	1	1	1.5	0.5	2	4.15	0.5
							Sampled_Date_Time	13-10-18	13-10-18	13-10-18	20-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	07-10-18	07-10-18	06-10-18	10-07-18	07-10-18	13-10-18	13-10-18	13-10-18	27-10-18
							Field_ID	SRT-BH419_1.0	SRT_QCA104	QCB104	SRT-BH419-1.05	SRT-BH420-0.5	SRT-BH420-1.0	SRT-BH420-2.0	SRT_BH421_0.25	SRT_BH421_0.5	QCA102	QCB102	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0	QCA103	QCB103	SRT_BH422_1.5	SRT-BH423_0.5	SRT-BH423_2.0	SRT_BH423_4.15	SRT-BH424-0.5
Benzo(a)pyrene TCLP	mg/L	0.5			0.04	0.16	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	<0.0005	-	-	-
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5					<0.5	<0.5	<0.5	3.3	0.9	<0.5	<0.5	-	1	1.2	1.1	<0.5	<0.5	1.8	<0.5	0.7	<0.5	1.1	2.6	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5					0.6	0.6	<0.5	3.6	1.2	0.6	0.6	-	1.3	1.5	1.2	0.6	0.6	2	0.6	1	<0.5	1.4	2.8	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5					1.2	1.2	<0.5	3.8	1.6	1.2	1.2	-	1.6	1.8	1.2	1.2	1.2	2.3	1.2	1.3	<0.5	1.7	3.1	1.2	1.2	1.2
Benzo(b&(j)fluoranthene	mg/kg	0.5					<0.5	<0.5	-	2.8	0.8	<0.5	<0.5	-	0.8	1	-	<0.5	<0.5	1.4	<0.5	0.6	-	0.8	2.1	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	mg/kg	0.5					<0.5	<0.5	<0.1	1.2	<0.5	<0.5	<0.5	-	<0.5	<0.5	0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.1	<0.5	1.2	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	mg/kg	0.5					<0.5	<0.5	-	1.2	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	0.6	<0.5	<0.5	-	<0.5	0.8	<0.5	<0.5	<0.5
Chrysene	mg/kg	0.5					<0.5	<0.5	0.1	2.6	0.6	<0.5	<0.5	-	0.8	1	0.9	<0.5	<0.5	1.2	<0.5	0.5	<0.1	0.8	1.7	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	mg/kg	0.5					<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	mg/kg	0.5					<0.5	<0.5	0.3	8.7	1.3	0.9	<0.5	-	2.2	2.6	2.1	<0.5	<0.5	3.3	0.8	1.3	0.1	2.1	3.8	<0.5	<0.5	<0.5
Fluorene	mg/kg	0.5					<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5					<0.5	<0.5	<0.1	1	<0.5	<0.5	<0.5	-	<0.5	<0.5	0.4	<0.5	<0.5	0.5	<0.5	<0.5	<0.1	<0.5	0.9	<0.5	<0.5	<0.5
Naphthalene	mg/kg	0.5					<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	mg/kg	0.5					<0.5	<0.5	0.2	8.5	0.5	0.8	<0.5	-	1.8	2	1.6	<0.5	<0.5	1.8	<0.5	0.6	<0.1	0.9	1.8	<0.5	<0.5	<0.5
Pyrene	mg/kg	0.5					<0.5	<0.5	0.3	7.4	1.4	0.9	<0.5	-	2.3	2.7	2	<0.5	<0.5	3.2	0.8	1.4	0.1	2	4	<0.5	<0.5	<0.5
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5	200	800			<0.5	<0.5	-	41.4	6	2.6	<0.5	-	9.5	11.9	-	<0.5	<0.5	15.4	1.6	5.6	-	8.4	20	<0.5	<0.5	<0.5
Total PAH (NEPM/WHO 16)	mg/kg	0.05					-	-	1.1	-	-	-	-	-	-	-	11	-	-	-	-	-	0.3	-	-	-	-	-
Phenols																													
Phenolics (Sum of total)	mg/kg	1					<1	-	-	<1	<1	-	-	-	-	-	-	-	-	<1	-	-	-	-	<1	-	-	<1
Polychlorinated Biphenyls																													
Aroclor 1016	mg/kg	0.1					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1232	mg/kg	0.1					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1242	mg/kg	0.1					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1248	mg/kg	0.1					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1254	mg/kg	0.1					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1260	mg/kg	0.1					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1221	mg/kg	0.1					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCB (Sum of Total-Lab Reported)	mg/kg	0.1	<50	<50			<0.1	-	-	<0.1	<0.1	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	<0.1	-	-	<0.1
Volatile Organic Compounds																													
1,4-Dichlorobenzene	mg/kg	0.5	150	600			<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
4-Chlorotoluene	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
Cyclohexane	mg/kg	1					-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichlorobenzene	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
1,2,4-Trichlorobenzene	mg/kg	0.5	<50[#1]	<50[#1]			<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
1,2-Dichlorobenzene	mg/kg	0.5	86	344			<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
1,3-Dichlorobenzene	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
2-Chlorotoluene	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
Bromobenzene	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
Chlorobenzene	mg/kg	0.5	2000	8000			<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
1,2,4-trimethylbenzene	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
1,3,5-Trimethylbenzene	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
Isopropylbenzene	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
n-Butylbenzene	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
n-Propylbenzene	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
p-Isopropyltoluene	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
sec-Butylbenzene	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
Styrene	mg/kg	0.5	60	240			<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
tert-Butylbenzene	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
Methyl Ethyl Ketone	mg/kg	5	4000	16000			<5	<5	-	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	-	<5	<5
2-Hexanone	mg/kg	5					<5	<5	-	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	-	<5	<5
Methyl iso-butyl ketone	mg/kg	5					<5	<5	-	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	-	<5	<5
Vinyl acetate	mg/kg	5					<5	<5	-	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	-	<5	<5
1,1,1,2-Tetrachloroethane	mg/kg	0.5	200	800			<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
1,1,2,2-Tetrachloroethane	mg/kg	0.5	26	104			<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
1,1,1-Trichloroethane	mg/kg	0.5	600	2400			<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
1,1,2-Trichloroethane	mg/kg	0.5	24	96			<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
1,2,3-Trichloropropane	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
1,2-Dibromo-3-chloropropane	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
1,2-Dibromoethane	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
1,1-Dichloroethane	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
1,2-Dichloroethane	mg/kg	0.5	10	40			<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
1,1-Dichloroethene	mg/kg	0.5	14	56			<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
cis-1,2-Dichloroethene	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
trans-1,2-dichloroethene	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
1,2-Dichloropropane	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
1,3-Dichloropropane	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
2,2-Dichloropropane	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
1,1-Dichloropropene	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
cis-1,3-Dichloropropene	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
trans-1,3-dichloropropene	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
cis-1,4-Dichloro-2-butene	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
trans-1,4-Dichloro-2-butene	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
Bromochloromethane	mg/kg	1					-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
Bromoform	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
Bromomethane	mg/kg	5					<5	<5	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	-	<5	<5
Carbon disulfide	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
Carbon tetrachloride	mg/kg	0.5	10	40			<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
Chlorodibromomethane	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
Chloroethane	mg/kg	5					<5	<5	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	-	<5	<5
Chloroform	mg/kg	0.5	120	480			<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
Chloromethane	mg/kg	5					<5	<5	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	-	<5	<5
Dibromomethane	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
Dichlorodifluoromethane	mg/kg	5					<5	<5	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	-	<5	<5
Hexachlorobutadiene	mg/kg	0.5					<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
Iodomethane	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
Pentachloroethane	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
Trichloroethene	mg/kg	0.5	10	40			<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
Tetrachloroethene	mg/kg	0.5	14	56			<0.5	<0.5	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	<0.5
Trichlorofluoromethane	mg/kg	5					<5	<5	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	-	<5	<5
Vinyl chloride	mg/kg	5	4	16			<5	<5	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	-	<5	<5
Perfluorinated Compounds																													
10:2 Fluorotelomer sulfonic acid	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-

					Location_Code	SRT-BH419	SRT-BH419	SRT-BH419	SRT-BH419	SRT-BH420	SRT-BH420	SRT-BH420	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH423	SRT-BH423	SRT-BH423	SRT-BH424
					Sample_Depth_Avg	1	1	1	1.05	0.5	1	2	0.25	0.5	0.5	0.5	1	3	0.5	1	1	1	1.5	0.5	2	4.15	0.5
					Sampled_Date_Time	13-10-18	13-10-18	13-10-18	20-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	10-06-18	06-10-18	06-10-18	07-10-18	07-10-18	06-10-18	10-07-18	07-10-18	13-10-18	13-10-18	13-10-18	27-10-18
					Field_ID	SRT-BH419_1.0	SRT_QCA104	QCB104	SRT-BH419-1.05	SRT-BH420-0.5	SRT-BH420-1.0	SRT-BH420-2.0	SRT_BH421_0.25	SRT_BH421_0.5	QCA102	QCB102	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0	QCA103	QCB103	SRT_BH422_1.5	SRT-BH423_0.5	SRT-BH423_2.0	SRT_BH423_4.15	SRT-BH424-0.5
ChemName	Units	EQL	CT1 General Solid Waste	CT2 Restricted Solid Waste	SCC1 / TCLP1 General Solid Waste	SCC2 / TCLP2 Restricted Solid Waste																					
4:2 Fluorotelomer sulfonic acid	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-
8:2 Fluorotelomer sulfonate	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-
N-Et-FOSA	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-
N-Et-FOSE	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-
N-Me-FOSA	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-
N-Me-FOSE	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-
Perfluorobutanoic acid (PFBA)	mg/kg	0.001					-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonic acid	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-
Perfluoro-n-pentanoic acid (PFPeA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-
Perfluoropentane sulfonic acid	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-
PFDcS	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-
Sum of PFHxS and PFOS (lab reported)	mg/kg	0.0002			**1.8**	**7.2**	-	-	-	-	-	-	-	-	-	-	-	-	**0.0002**	-	-	-	-	-	-	-	-
Sum of PFHxS and PFOS (TCLP)	µg/L	0.01			**0.05**	**0.2**	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-
Sum of WA DER PFAS (n=10)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	**0.0002**	-	-	-	-	-	-	-	-
Sum of PFASs (n=28)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	**0.0002**	-	-	-	-	-	-	-	-
Perfluorobutanesulfonic acid (PFBS)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	**0.0002**	-	-	-	-	-	-	-	-
Perfluorooctanoate (PFOA)	mg/kg	0.0002			**18**	**72**	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-
Perfluorooctanoate (PFOA)	µg/L	0.01			**0.5**	**2**	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-
Perfluorohexanesulfonic acid (PFHxS)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-
Perfluorononanoic acid (PFNA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-
Perfluorooctanesulfonamide (PFOSA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005					-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0002					-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	-	-	-	-	-	-	-

Env Stds Comments
#1:Criteria of <50 mg/kg for sum of all Scheduled Chemicals
#2:Total concentration of Moderately Harmful Pesticides <250 mg/kg for CT1 and <1000 mg/kg for CT2

AD: Asbestos detected
NAD: No asbestos detected
NFD: No fibres detected
Ch: Chrysotile (white asbestos)

						Location_Code	SRT-BH424	SRT-BH424	SRT-BH424	SRT-BH424	SRT-BH425	SRT-BH425	SRT-BH425	SRT-BH425	SRT-BH425	SRT-BH426	SRT-BH426	SRT-BH426	SRT-BH426	SRT-BH426
						Sample_Depth_Avg	0.5	0.5	1	3	0.15	0.4	0.5	1	2	0.1	0.5	1	2	4
						Sampled_Date_Time	27-10-18	27-10-18	27-10-18	27-10-18	13-10-18	27-10-18	27-10-18	27-10-18	27-10-18	07-10-18	07-10-18	07-10-18	07-10-18	07-10-18
						Field_ID	SRT-QCA108	SRT-QCB108	SRT-BH424-1.0	SRT-BH424-3.0	SRT_BH425_0.15	SRT-BH425-0.4	SRT-BH425-0.5	SRT-BH425-1.0	SRT-BH425-2.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0	SRT_BH426_2.0	SRT_BH426_4.0
ChemName	**Units**	**EQL**	CT1 General Solid Waste	CT2 Restricted Solid Waste	SCC1 / TCLP1 General Solid Waste	SCC2 / TCLP2 Restricted Solid Waste														
Asbestos																				
Asbestos in soil (>7mm ACM)	%w/w	0.01					-	-	-	-	<0.01	-	<0.01	-	-	<0.01	-	-	-	-
Asbestos in soil (<7mm AF/FA)	%w/w	0.001					-	-	-	-	<0.001	-	<0.001	-	-	<0.001	-	-	-	-
Weight Asbestos in soil (>7mm ACM)	g	0.1					-	-	-	-	<0.1	-	<0.1	-	-	<0.1	-	-	-	-
Weight Asbestos in soil (<7mm AF/FA)	g	0.0004					-	-	-	-	<0.0004	-	<0.0004	-	-	<0.0004	-	-	-	-
Asbestos Type	No						-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos Detected	No	0.1					-	-	-	-	NAD	-	NAD	-	-	NAD	-	-	-	-
Asbestos Fibres Detected	Fibres	5					-	-	-	-	NFD	-	NFD	-	-	NFD	-	-	-	-
Fibrous Asbestos >7mm	mg/kg	0.0004					-	-	-	-	<0.0004	-	<0.0004	-	-	<0.0004	-	-	-	-
Mass of test sample	g	0.1					-	-	-	-	598	-	311	-	-	452	-	-	-	-
Sample weight (dry)	g	0.01					-	-	-	-	598	-	311	-	-	452	-	-	-	-
TPH Group																				
TRH C6 - C9 Fraction	mg/kg	10	**650**	**2600**			<10	<25	<10	<10	<10	13	-	<10	<10	<10	-	<10	<10	<10
TRH C10 - C14 Fraction	mg/kg	50					<50	<50	<50	<50	<50	960	-	<50	<50	<50	-	<50	<50	<50
TRH C15 - C28 Fraction	mg/kg	100					<100	<100	<100	<100	720	17,300	-	<100	<100	<100	-	<100	<100	<100
TRH C29 - C36 Fraction	mg/kg	100					<100	<100	<100	<100	480	8810	-	<100	<100	<100	-	<100	<100	<100
TRH+C10 - C36 (Sum of total) (Lab Reported)	mg/kg	50	**10000**	**40000**			<50	-	<50	<50	1200	**27,100**	-	<50	<50	<50	-	<50	<50	<50
BTEX																				
Benzene	mg/kg	0.2	**10**	**40**			<0.2	<0.2	<0.2	<0.2	<0.2	1.8	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Toluene	mg/kg	0.5	**288**	**1152**			<0.5	<0.5	<0.5	<0.5	<0.5	2.8	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	0.5	**600**	**2400**			<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Xylenes (m & p)	mg/kg	0.5					<0.5	<2	<0.5	<0.5	<0.5	1.8	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Xylene (o)	mg/kg	0.5					<0.5	<1	<0.5	<0.5	<0.5	0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5	**1000**	**4000**			<0.5	<1	<0.5	<0.5	<0.5	2.3	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Total BTEX	mg/kg	0.2					<0.2	-	<0.2	<0.2	<0.2	6.9	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Heavy Metals																				
Arsenic	mg/kg	5	**100**	**400**			<5	<4	<5	<5	5	<5	-	<5	<5	<5	-	<5	<5	<5
Cadmium	mg/kg	1	**20**	**80**			<1	<0.4	<1	<1	1	<1	-	<1	<1	<1	-	<1	<1	<1
Chromium	mg/kg	2	**100**	**400**			3	4	4	<2	8	4	-	2	<2	5	-	5	<2	<2
Copper	mg/kg	5					11	39	22	<5	128	85	-	33	<5	21	-	37	<5	<5
Lead	mg/kg	5	**100**	**400**	**1500**	**6000**	167	150	104	<5	1100	345	-	123	<5	142	-	246	<5	<5
Lead TCLP	mg/L	0.1			**5**	**20**	-	-	<0.1	-	2.2	2.9	-	0.4	-	0.1	-	0.1	-	-
Mercury	mg/kg	0.1	**4**	**16**	**50**	**200**	0.2	0.3	0.1	<0.1	1.1	1	-	0.2	<0.1	0.2	-	0.8	<0.1	<0.1
Mercury TCLP	mg/L	0.001			**0.2**	**0.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	mg/kg	2	**40**	**160**			<2	3	5	<2	7	7	-	2	<2	2	-	3	<2	<2
Zinc	mg/kg	5					66	51	67	8	566	150	-	79	<5	122	-	171	10	6
Organochlorine Pesticides																				
a-BHC	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Aldrin	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Dieldrin	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Aldrin & Dieldrin (Sum of total) (Lab Reported)	mg/kg	0.05					-	-	-	-	-	<0.8	-	-	-	-	<0.05	-	-	-
b-BHC	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
cis-Chlordane	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
trans-Chlordane	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Chlordane (Sum of total)	mg/kg	0.05					-	-	-	-	-	<0.8	-	-	-	-	<0.05	-	-	-
d-BHC	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
DDD	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
DDE	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
DDT	mg/kg	0.2	**<50**[#1]	**<50**[#1]			-	<0.1	-	-	-	<10	-	-	-	-	<0.2	-	-	-
DDT+DDE+DDD (Sum of total) (Lab Reported)	mg/kg	0.05					-	<0.1	-	-	-	<0.8	-	-	-	-	<0.05	-	-	-
Endosulfan	mg/kg	0.05	**60**	**240**			-	-	-	-	-	<1.5	-	-	-	-	<0.05	-	-	-
Endosulfan I	mg/kg	0.05					-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Endosulfan II	mg/kg	0.05					-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Endosulfan sulphate	mg/kg	0.05					-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Endrin	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Endrin aldehyde	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Endrin ketone	mg/kg	0.05					-	-	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
g-BHC	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Heptachlor	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Heptachlor epoxide	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Hexachlorobenzene	mg/kg	0.05	**<50**[#1]	**<50**[#1]			-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Methoxychlor	mg/kg	0.2					-	<0.1	-	-	-	<10	-	-	-	-	<0.2	-	-	-
Organophosphorous Pesticides																				
Azinphos-methyl	mg/kg	0.05					-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Bromophos-ethyl	mg/kg	0.05					-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Carbophenothion	mg/kg	0.05					-	-	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Chlorfenvinphos	mg/kg	0.05					-	-	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Chlorpyriphos	mg/kg	0.05	**4**	**16**			-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Chlorpyriphos-methyl	mg/kg	0.05					-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Demeton-s-methyl	mg/kg	0.05					-	-	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Diazinon	mg/kg	0.05					-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Dichlorvos	mg/kg	0.05	**250**[#2]	**1000**[#2]			-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Dimethoate	mg/kg	0.05	**250**[#2]	**1000**[#2]			-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Ethion	mg/kg	0.05	**250**[#2]	**1000**[#2]			-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Fenamiphos	mg/kg	0.05					-	-	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Fenitrothion	mg/kg	0.1	**250**[#2]	**1000**[#2]			-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Fenthion	mg/kg	0.05	**250**[#2]	**1000**[#2]			-	-	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Malathion	mg/kg	0.05	**250**[#2]	**1000**[#2]			-	<0.1	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Parathion-methyl	mg/kg	0.2	**250**[#2]	**1000**[#2]			-	-	-	-	-	<10	-	-	-	-	<0.2	-	-	-
Monocrotophos	mg/kg	0.2					-	-	-	-	-	<10	-	-	-	-	<0.2	-	-	-
Parathion	mg/kg	0.2					-	<0.1	-	-	-	<10	-	-	-	-	<0.2	-	-	-
Pirimphos-ethyl	mg/kg	0.05					-	-	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Prothiofos	mg/kg	0.05					-	-	-	-	-	<2.5	-	-	-	-	<0.05	-	-	-
Ronnel	mg/kg	0.1					-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
PAHs																				
Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2					-	<0.2	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/kg	0.5					<0.5	<0.1	<0.5	<0.5	0.6	32.4	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Acenaphthylene	mg/kg	0.5					<0.5	<0.1	<0.5	<0.5	6.3	142	-	0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Anthracene	mg/kg	0.5					<0.5	<0.1	<0.5	<0.5	9.2	228	-	0.7	<0.5	<0.5	-	<0.5	<0.5	<0.5
Benz(a)anthracene	mg/kg	0.5					<0.5	<0.1	<0.5	<0.5	20.7	374	-	0.9	<0.5	<0.5	-	0.9	<0.5	<0.5
Benzo(a)pyrene	mg/kg	0.5	**0.8**	**3.2**	**10**	**23**	<0.5	<0.05	<0.5	<0.5	**19**	**320**	-	**0.9**	<0.5	<0.5	-	**0.9**	<0.5	<0.5

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					Location_Code	SRT-BH424	SRT-BH424	SRT-BH424	SRT-BH424	SRT-BH425	SRT-BH425	SRT-BH425	SRT-BH425	SRT-BH425	SRT-BH426	SRT-BH426	SRT-BH426	SRT-BH426	SRT-BH426
					Sample_Depth_Avg	0.5	0.5	1	3	0.15	0.4	0.5	1	2	0.1	0.5	1	2	4
					Sampled_Date_Time	27-10-18	27-10-18	27-10-18	27-10-18	13-10-18	27-10-18	27-10-18	27-10-18	27-10-18	07-10-18	07-10-18	07-10-18	07-10-18	07-10-18
					Field_ID	SRT-QCA108	SRT-QCB108	SRT-BH424-1.0	SRT-BH424-3.0	SRT_BH425_0.15	SRT-BH425-0.4	SRT-BH425-0.5	SRT-BH425-1.0	SRT-BH425-2.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0	SRT_BH426_2.0	SRT_BH426_4.0
ChemName	Units	EQL	CT1 General Solid Waste	CT2 Restricted Solid Waste	SCC1 / TCLP1 General Solid Waste	SCC2 / TCLP2 Restricted Solid Waste															
4:2 Fluorotelomer sulfonic acid	mg/kg	0.0005					-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-
8:2 Fluorotelomer sulfonate	mg/kg	0.0005					-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-
N-Et-FOSA	mg/kg	0.0005					-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-
N-Et-FOSE	mg/kg	0.0005					-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-
N-Me-FOSA	mg/kg	0.0005					-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-
N-Me-FOSE	mg/kg	0.0005					-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid (PFBA)	mg/kg	0.001					-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonic acid	mg/kg	0.0002					-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-pentanoic acid (PFPeA)	mg/kg	0.0002					-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentane sulfonic acid	mg/kg	0.0002					-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
PFDcS	mg/kg	0.0002					-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002					-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Sum of PFHxS and PFOS (lab reported)	mg/kg	0.0002			**1.8**	**7.2**	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Sum of PFHxS and PFOS (TCLP)	µg/L	0.01			**0.05**	**0.2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sum of WA DER PFAS (n=10)	mg/kg	0.0002					-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Sum of PFASs (n=28)	mg/kg	0.0002					-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanesulfonic acid (PFBS)	mg/kg	0.0002					-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002					-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0002					-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002					-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002					-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanoate (PFOA)	mg/kg	0.0002			**18**	**72**	-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanoate (PFOA)	µg/L	0.01			**0.5**	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanesulfonic acid (PFHxS)	mg/kg	0.0002					-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluorononanoic acid (PFNA)	mg/kg	0.0002					-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002					-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005					-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002					-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonamide (PFOSA)	mg/kg	0.0002					-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005					-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002					-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0002					-	-	-	<0.0002	-	-	-	-	-	-	-	-	-	-	-

Env Stds Comments
#1:Criteria of <50 mg/kg for sum of all Scheduled Chemicals
#2:Total concentration of Moderately Harmful Pesticides <250 mg/kg for CT1 and <1000 mg/kg for CT2

AD: Asbestos detected
NAD: No asbestos detected
NFD: No fibres detected
Ch: Chrysotile (white asbestos)

ChemName	output unit	EQL	ASS Action Criteria	Location_Code	SRT-BH408	SRT-BH409	SRT-BH409	SRT-BH410	SRT-BH411	SRT-BH412	SRT-BH413A	SRT-BH415	SRT-BH416	SRT-BH418	SRT-BH419	SRT-BH420	SRT-BH420
				Sample_Depth_Avg	3	3	4	3	3	3	3	4	3	3	3	3	4
				Sampled_Date_Time	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	28-10-18	20-10-18	06-10-18	27-10-18	20-10-18	06-10-18	06-10-18
				Field_ID	SRT_BH408_3.0	SRT_BH409_3.0	SRT_BH409_4.0	SRT_BH410_3.0	SRT_BH411_3.0	SRT_BH412_3.0	SRT-BH413A-3.0	SRT-BH415-4.0	SRT_BH416_3.0	SRT-BH418-3.0	SRT-BH419-3.0	SRT-BH420-3.0	SRT-BH420-4.0-4.45
Acid Sulfate Soils Analysis																	
Net Acidity excluding ANC (sulfur units)	%S	0.02			<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
ANC Fineness Factor	-	0.5			1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Excess Acid Neutralising Capacity	%S	0.02			-	-	-	-	-	-	-	-	-	-	-	0.634	-
pH OX	pH Unit	0.1			4.6	4.6	5.1	4.5	5.4	5.4	4.8	5	5.2	4.8	4.1	6.7	5.1
Sulfidic - Acid Reacted Calcium	%	0.02			<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Sulfidic - Acid Reacted Magnesium	%S	0.02			<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Titratable Sulfidic Acidity	moles H+/t	2			75	64	62	74	67	75	5	8	66	7	7	<2	65
pH KCl	pH Unit	0.1			5.8	5.1	5.8	5.9	5.8	6	6.6	6	6	5.8	5.7	6.8	6
Titratable Actual Acidity	moles H+/t	2			2	11	5	6	2	<2	<2	<2	<2	4	<2	<2	<2
KCl Extractable Sulfur	% S	0.02			<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Titratable Peroxide Acidity	moles H+/t	2			77	76	66	79	69	75	5	8	66	12	7	<2	65
Acidity - Excess Acid Neutralising Capacity (ANCE moles H+/T)	moles H+/t	10			-	-	-	-	-	-	-	-	-	-	-	127	-
Sulfidic - Excess Acid Neutralising Capacity (ANCE %S)	%w/w S	0.02			-	-	-	-	-	-	-	-	-	-	-	0.203	-
Acidity - Peroxide Oxidisable Sulfur	moles H+/t	10			<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acid Reacted Calcium	%	0.02			<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Acidity - Acid Reacted Calcium	mole H+/t	10			<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Magnesium in Peroxide	%	0.02			<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Acid Reacted Magnesium	%	0.02			<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Acidity - Acid Reacted Magnesium	mole H+/t	10			<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Net Acidity (sulfur units)	%S	0.02	**0.03**		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Net Acidity (acidity units)	moles H+/t	10	**18**		<10	11	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Liming Rate	kg CaCO3/t	1			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
a-Net Acidity without ANCE (acidity units)	moles H+/t	10			<10	11	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Liming rate without ANCE kg CaCO3/t	kg CaCo3/t	1			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

			Location_Code	SRT-BH420	SRT-BH421	SRT-BH422	SRT-BH423	SRT-BH423	SRT-BH425	SRT-BH426	SRT-BH426
			Sample_Depth_Avg	5.5	3	3	3	4.15	3	4	5
			Sampled_Date_Time	06-10-18	06-10-18	07-10-18	13-10-18	13-10-18	27-10-18	07-10-18	07-10-18
			Field_ID	SRT-BH420-5.5-5.95	SRT_BH421_3.0	SRT_BH422_3.0	SRT_BH423_3.0	SRT_BH423_4.15	SRT-BH425-3.0	SRT_BH426_4.0	SRT_BH426_5.0
ChemName	**output unit**	**EQL**	ASS Action Criteria								
Acid Sulfate Soils Analysis											
Net Acidity excluding ANC (sulfur units)	%S	0.02		0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
ANC Fineness Factor	-	0.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Excess Acid Neutralising Capacity	%S	0.02		-	-	-	-	-	-	-	-
pH OX	pH Unit	0.1		4.9	5.2	5.1	6.4	5.6	4.8	5.2	5.3
Sulfidic - Acid Reacted Calcium	%	0.02		0.022	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Sulfidic - Acid Reacted Magnesium	%S	0.02		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Titratable Sulfidic Acidity	moles H+/t	2		55	70	77	2	5	5	70	69
pH KCl	pH Unit	0.1		4.8	6	5.9	7.4	6.4	5.8	5.9	5.9
Titratable Actual Acidity	moles H+/t	2		25	<2	<2	<2	<2	2	<2	<2
KCl Extractable Sulfur	% S	0.02		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Titratable Peroxide Acidity	moles H+/t	2		80	70	77	2	5	7	70	69
Acidity - Excess Acid Neutralising Capacity (ANCE moles H+/T)	moles H+/t	10		-	-	-	-	-	-	-	-
Sulfidic - Excess Acid Neutralising Capacity (ANCE %S)	%w/w S	0.02		-	-	-	-	-	-	-	-
Acidity - Peroxide Oxidisable Sulfur	moles H+/t	10		<10	<10	<10	<10	<10	<10	<10	<10
Acid Reacted Calcium	%	0.02		0.027	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Acidity - Acid Reacted Calcium	mole H+/t	10		14	<10	<10	<10	<10	<10	<10	<10
Magnesium in Peroxide	%	0.02		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Acid Reacted Magnesium	%	0.02		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Acidity - Acid Reacted Magnesium	mole H+/t	10		<10	<10	<10	<10	<10	<10	<10	<10
Net Acidity (sulfur units)	%S	0.02	**0.03**	**0.04**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Net Acidity (acidity units)	moles H+/t	10	**18**	**25**	<10	<10	<10	<10	<10	<10	<10
Liming Rate	kg CaCO3/t	1		2	<1	<1	<1	<1	<1	<1	<1
a-Net Acidity without ANCE (acidity units)	moles H+/t	10		25	<10	<10	<10	<10	<10	<10	<10
Liming rate without ANCE kg CaCO3/t	kg CaCo3/t	1		2	<1	<1	<1	<1	<1	<1	<1

Location_Code	SRT-BH410	SRT-BH419	SRT-BH423
Sample_Depth_Avg	1.5	0.5	2
Sampled_Date_Time	06-11-18	13-10-18	13-10-18
Field_ID	SRT_BH410_1.5	SRT-BH419_0.5	SRT-BH423_2.0

ChemName	output unit	EQL			
EIL Parameters					
Exchangeable Sodium Percent	%	0.1	8.9	<0.2	<0.2
Clay(<2µm)	%w/w	1	7	7	1
CEC	cmol/kg	0.1	1.3	16.7	<0.2
Density	g/cm3	0.01	2.6	2.44	2.62
pH (Lab)	pH	0.1	5	11.4	9.1

					Location_Code	SRT-BH409	SRT-BH419	SRT-BH420	SRT-BH426	SRT-GMW1A	SRT-GMW2A	SRT-GMW2A	SRT-GMW2A
					Sampled_Date_Time	02-11-18	28-10-18	02-11-18	28-10-18	28-10-18	28-10-18	28-10-18	28-10-18
					Field_ID	SRT-BH409	SRT-BH419	SRT-BH420	SRT-BH426	SRT-GMW1A	SRT-GMW2A	SRT-QCA200	SRT-QCB200
ChemName	**output unit**	**EQL**	95% Protection of Species ANZG 2018	ADWG 2011 Health	ADWG 2011 Health (x10)	NEPM 2013 Comm/Ind HSL D GW for Vapour Intrusion, Sand 2 4m								
General Parameters														
Sodium (Filtered)	mg/L	1					45	43	36	35	81	29	30	32
Potassium (Filtered)	mg/L	1					6	14	8	12	30	6	6	6.4
Calcium (Filtered)	mg/L	1					28	56	25	61	131	37	38	36
Magnesium (Filtered)	mg/L	1					5	11	7	8	25	7	8	7.2
Chloride	mg/L	1					26	43	40	43	72	34	34	41
Sulphate (as SO4)	mg/L	1		**250**	**2500**		-	-	-	-	-	-	-	49
Sulphate (as SO4) (Filtered)	mg/L	1		**250**	**2500**		56	60	76	54	272	50	46	-
Bicarbonate Alkalinity (as CaCO3)	mg/L	1					79	81	27	89	41	48	45	-
Carbonate Alkalinity (as CaCO3)	mg/L	1					<1	<1	<1	<1	<1	<1	<1	-
Hydroxide Alkalinity (as CaCO3)	mg/L	1					<1	<1	<1	<1	<1	<1	<1	-
Total Alkalinity (as CaCO3)	mg/L	1					79	81	27	89	41	48	45	-
Nitrogen (Total Oxidised)	mg/L	0.01					9.78	22.7	12.4	17.2	73	13.6	13.7	-
Ammonia (as N)	mg/L	0.01	**0.91**				0.09	0.03	<0.01	0.02	0.03	0.03	0.02	<0.005
Total Kjeldahl Nitrogen (as N)	mg/L	0.1					1.8	1.4	2.3	0.2	<0.1	0.8	0.9	-
Nitrogen (Total)	mg/L	0.1					11.6	24.1	14.7	17.4	73	14.4	14.6	44
Fluoride	mg/L	0.1		**1.5**	**15**		0.1	0.2	<0.1	0.2	<0.1	0.5	0.5	-
Reactive Phosphorus (as P)	mg/L	0.01					<0.01	<0.01	<0.01	0.52	<0.01	0.03	0.03	-
Total Phosphorus (as P)	mg/L	0.01					0.59	0.27	0.04	0.49	0.02	0.03	0.03	0.06
Ortho phosphate (as P)	µg/L	5					-	-	-	-	-	-	-	42
Total Anions	meq/L	0.01					4.18	5.7	3.25	5.35	13.7	3.93	3.8	-
Total Cations	meq/L	0.01					3.92	5.93	3.59	5.53	12.9	3.84	4.01	-
Ionic Balance (Lab)	%	0.01					3.19	1.93	5.02	1.71	3.17	1.21	2.79	-
Perfluorinated Compounds														
10:2 Fluorotelomer sulfonic acid	µg/L	0.05					<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01
4:2 Fluorotelomer sulfonic acid	µg/L	0.05					<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01
8:2 Fluorotelomer sulfonate	µg/L	0.05					<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01
N-Et-FOSA	µg/L	0.05					<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1
N-Et-FOSE	µg/L	0.05					<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
N-Me-FOSA	µg/L	0.05					<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
N-Me-FOSE	µg/L	0.05					<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Perfluorobutanoic acid (PFBA)	µg/L	0.1					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.02
Perfluoroheptane sulfonic acid	µg/L	0.02					<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01
Perfluoro-n-pentanoic acid (PFPeA)	µg/L	0.02					<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid	µg/L	0.02					<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01
PFDcS	µg/L	0.02					<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
N-methyl-perfluorooctanesulfonamidoacetic acid	µg/L	0.02					<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Sum of PFHxS and PFOS (lab reported)	µg/L	0.01		**0.07**[#1]	**0.7**[#1]		0.02	0.04	<0.01	**0.42**	**0.48**	**0.12**	**0.12**	0.05
Sum of US EPA PFAS (PFOS + PFOA)	µg/L	0.01					-	-	-	-	-	-	-	0.04
Sum of WA DER PFAS (n=10)	µg/L	0.01					0.02	0.08	<0.01	0.47	0.48	0.12	0.12	-
Sum of PFASs (n=28)	µg/L	0.01					0.02	0.1	<0.01	0.47	0.48	0.12	0.12	0.05
Perfluorobutanesulfonic acid (PFBS)	µg/L	0.02					<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01
Perfluorodecanoic acid (PFDA)	µg/L	0.02					<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoA)	µg/L	0.02					<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02					<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01
Perfluorooctanesulfonic acid (PFOS)	µg/L	0.01	**0.00023**[#2]				<0.01	**0.02**	<0.01	**0.4**	**0.41**	**0.09**	**0.09**	**0.04**
Perfluorooctanoate (PFOA)	µg/L	0.01	**19**[#2]	**0.56**[#1]	**5.6**[#1]		<0.01	0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01
Perfluorohexanesulfonic acid (PFHxS)	µg/L	0.02					0.02	0.02	<0.02	0.02	0.07	0.03	0.03	0.01
Perfluorononanoic acid (PFNA)	µg/L	0.02					<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01
Perfluorohexanoic acid (PFHxA)	µg/L	0.02					<0.02	0.03	<0.02	0.04	<0.02	<0.02	<0.02	<0.01
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05					<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01
N-ethyl-perfluorooctanesulfonamidoacetic acid	µg/L	0.02					<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanesulfonamide (PFOSA)	µg/L	0.02					<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05					<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02					<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1
Perfluoroundecanoic acid (PFUnA)	µg/L	0.02					<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
TRHs														
TRH C6 - C10 Fraction F1	mg/L	0.02					<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.017
TRH C6 - C10 Fraction Less BTEX F1	mg/L	0.02		**1.3**[#3]	**13**[#3]	***6***	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.017
TRH >C10 - C16 Fraction F2	mg/L	0.1					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
TRH >C10 - C16 Fraction Less Naphthalene (F2)	mg/L	0.1		**0.1**[#3]	**1**[#3]	**NL**[#4]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
TRH >C16 - C34 Fraction F3	mg/L	0.1		**0.8**[#3]	**8**[#3]		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH >C34 - C40 Fraction F4	mg/L	0.1		**0.8**[#3]	**8**[#3]		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH+C10 - C40 (Sum of total) (Lab Reported)	mg/L	0.1					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
BTEX														
Benzene	µg/L	1	**700**	**1**	**10**	***5000***	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	µg/L	2	**180**[#5]	**800**	**8000**	**NL**[#4]	<2	<2	<2	<2	<2	<2	<2	<1
Ethylbenzene	µg/L	2	**5**[#5]	**300**	**3000**	**NL**[#4]	<2	<2	<2	<2	<2	<2	<2	<1
Xylenes (m & p)	µg/L	2	**75**[#10]				<2	<2	<2	<2	<2	<2	<2	<2
Xylene (o)	µg/L	2	**350**[#5]				<2	<2	<2	<2	<2	<2	<2	<1
Xylenes (Sum of total) (Lab Reported)	µg/L	2		**600**	**6000**	**NL**[#4]	<2	<2	<2	<2	<2	<2	<2	-
Total BTEX	µg/L	1					<1	<1	<1	<1	<1	<1	<1	-
Heavy Metals														
Arsenic (Filtered)	µg/L	1	**13**[#6]**I24**[#7]	**10**	**100**		<1	<1	<1	<1	<1	<1	<1	<1
Cadmium (Filtered)	µg/L	0.1	**0.7**[#9]	**2**	**20**		<0.1	<0.1	<0.1	0.1	0.5	<0.1	<0.1	0.1
Chromium (Filtered)	µg/L	1	**4.4**[#8]	**50**[#8]	**500**[#8]		<1	<1	<1	<1	2	<1	<1	<1
Copper (Filtered)	µg/L	1	**1.3**	**2000**	**20000**		1	<1	**3**	**2**	**4**	1	1	1
Lead (Filtered)	µg/L	1	**4.4**	**10**	**100**		<1	<1	<1	<1	**16**	<1	<1	<1
Mercury (Filtered)	µg/L	0.1	**0.1**[#9]	**1**	**10**		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
Nickel (Filtered)	µg/L	1	**7**[#9]	**20**	**200**		1	1	2	3	<1	<1	<1	<1
Zinc (Filtered)	µg/L	5	**15**				8	**48**	**16**	**73**	**555**	**58**	**58**	**60**
Organochlorine Pesticides														
a-BHC	µg/L	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Aldrin	µg/L	0.5	**0.003**[#5]				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Dieldrin	µg/L	0.5	**0.01**[#5]				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Aldrin & Dieldrin (Sum of total) (Lab Reported)	µg/L	0.5		**0.3**	**3**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
b-BHC	µg/L	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
cis-Chlordane	µg/L	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
trans-Chlordane	µg/L	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Chlordane (Sum of total)	µg/L	0.5	**0.001**[#5]	**2**	**20**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
d-BHC	µg/L	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
DDD	µg/L	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
DDE	µg/L	0.5	**0.0005**[#5]				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
DDT	µg/L	2	**0.0004**[#5]	**9**	**90**		<2	<2	<2	<2	<2	<2	<2	<0.2
DDT+DDE+DDD (Sum of total) (Lab Reported)	µg/L	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
Endosulfan I	µg/L	0.5	**0.005**[#9]	**20**	**200**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Endosulfan II	µg/L	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Endosulfan sulphate	µg/L	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Endrin	µg/L	0.5	**0.004**[#9]				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Endrin aldehyde	µg/L	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Endrin ketone	µg/L	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
g-BHC	µg/L	0.5	**0.007**[#5]	**10**	**100**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Heptachlor	µg/L	0.5	**0.0004**[#5]	**0.3**	**3**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Heptachlor epoxide	µg/L	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Hexachlorobenzene	µg/L	0.5	**0.05**[#5]				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2

						Location_Code	SRT-BH409	SRT-BH419	SRT-BH420	SRT-BH426	SRT-GMW1A	SRT-GMW2A	SRT-GMW2A	SRT-GMW2A
						Sampled_Date_Time	02-11-18	28-10-18	02-11-18	28-10-18	28-10-18	28-10-18	28-10-18	28-10-18
						Field_ID	SRT-BH409	SRT-BH419	SRT-BH420	SRT-BH426	SRT-GMW1A	SRT-GMW2A	SRT-QCA200	SRT-QCB200
ChemName	**output unit**	**EQL**	95% Protection of Species ANZG 2018	ADWG 2011 Health	ADWG 2011 Health (x10)	NEPM 2013 Comm/Ind HSL D GW for Vapour Intrusion, Sand 2 4m								
Methoxychlor	µg/L	2	**0.004**[#5]	**300**	**3000**		<2	<2	<2	<2	<2	<2	<2	<0.2
Organophosphorous Pesticides														
Azinphos-methyl	µg/L	0.5	**0.01**[#5]	**30**	**300**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Bromophos-ethyl	µg/L	0.5		**10**	**100**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Carbophenothion	µg/L	0.5		**0.5**	**5**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
Chlorfenvinphos	µg/L	0.5		**2**	**20**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
Chlorpyriphos	µg/L	0.5	**0.009**	**10**	**100**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Chlorpyriphos-methyl	µg/L	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Demeton-s-methyl	µg/L	0.5	**4**[#5]				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
Diazinon	µg/L	0.5	**0.01**[#5]	**4**	**40**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Dichlorvos	µg/L	0.5		**5**	**50**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Dimethoate	µg/L	0.5	**0.15**[#5]	**7**	**70**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Ethion	µg/L	0.5		**4**	**40**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Fenamiphos	µg/L	0.5		**0.5**	**5**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
Fenitrothion	µg/L	0.2	**0.001**[#5]	**7**	**70**		-	-	-	-	-	-	-	<0.2
Fenthion	µg/L	0.5		**7**	**70**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
Malathion	µg/L	0.5	**0.05**[#5]	**70**	**700**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2
Parathion-methyl	µg/L	2		**0.7**	**7**		<2	<2	<2	<2	<2	<2	<2	-
Monocrotophos	µg/L	2		**2**	**20**		<2	<2	<2	<2	<2	<2	<2	-
Parathion	µg/L	2	**0.004**[#5]	**20**	**200**		<2	<2	<2	<2	<2	<2	<2	<0.2
Pirimphos-ethyl	µg/L	0.5		**0.5**	**5**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
Prothiofos	µg/L	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
Ronnel	µg/L	0.2					-	-	-	-	-	-	-	<0.2
PAHs														
Benzo(a)pyrene (TEQs)	µg/L	5					-	-	-	-	-	-	-	<5
Benzo(b+j) & Benzo(k)fluoranthene	µg/L	2					-	-	-	-	-	-	-	<2
Acenaphthene	µg/L	1					<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthylene	µg/L	1					<1	<1	<1	<1	<1	<1	<1	<1
Anthracene	µg/L	1	**0.1**[#5]				<1	<1	<1	<1	<1	<1	<1	<1
Benz(a)anthracene	µg/L	1					<1	<1	<1	<1	<1	<1	<1	<1
Benzo(a)pyrene	µg/L	0.5	**0.1**[#5]	**0.01**	**0.1**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
Benzo(a)pyrene TEQ (lower bound)*	µg/L	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
Benzo(b)&(j)fluoranthene	µg/L	1					<1	<1	<1	<1	<1	<1	<1	-
Benzo(g,h,i)perylene	µg/L	1					<1	<1	<1	<1	<1	<1	<1	<1
Benzo(k)fluoranthene	µg/L	1					<1	<1	<1	<1	<1	<1	<1	-
Chrysene	µg/L	1					<1	<1	<1	<1	<1	<1	<1	<1
Dibenz(a,h)anthracene	µg/L	1					<1	<1	<1	<1	<1	<1	<1	<1
Fluoranthene	µg/L	1	**1**[#5]				<1	<1	<1	<1	<1	<1	<1	<1
Fluorene	µg/L	1					<1	<1	<1	<1	<1	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	µg/L	1					<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	µg/L	1	**50**[#9]			**NL**[#4]	<1	<1	<1	<1	<1	<1	<1	<1
Phenanthrene	µg/L	1	**0.6**[#5]				<1	<1	<1	<1	<1	<1	<1	<1
Pyrene	µg/L	1					<1	<1	<1	<1	<1	<1	<1	<1
PAH (Sum of Common 16 PAHs - Lab Reported)	µg/L	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
Total PAH (NEPM/WHO 16)	µg/L	1					-	-	-	-	-	-	-	0
Phenols														
Phenolics (Sum of total)	µg/L	50					<50	<50	<50	<50	<50	<50	<50	<50
Polychlorinated Biphenyls														
Aroclor 1016	µg/L	2					-	-	-	-	-	-	-	<2
Aroclor 1232	µg/L	2					-	-	-	-	-	-	-	<2
Aroclor 1242	µg/L	2	**0.3**[#5]				-	-	-	-	-	-	-	<2
Aroclor 1248	µg/L	2					-	-	-	-	-	-	-	<2
Aroclor 1254	µg/L	2	**0.01**[#5]				-	-	-	-	-	-	-	<2
Aroclor 1260	µg/L	2					-	-	-	-	-	-	-	<2
Aroclor 1221	µg/L	2					-	-	-	-	-	-	-	<2
PCB (Sum of Total-Lab Reported)	µg/L	1					<1	<1	<1	<1	<1	<1	<1	-
Volatile Organic Compounds														
1,3-Dichloropropene (Calculated)	ug/L		**0.8**[#5]	**100**	**1000**		0	0	0	0	0	0	0	0
1,4-Dichlorobenzene	µg/L	5	**60**[#5]	**40**	**400**		<5	<5	<5	<5	<5	<5	<5	<1
4-Chlorotoluene	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
Cyclohexane	µg/L	1					-	-	-	-	-	-	-	<1
1,2,3-Trichlorobenzene	µg/L	5	**3**[#5]				<5	<5	<5	<5	<5	<5	<5	<1
1,2,4-Trichlorobenzene	µg/L	5	**20**[#9]				<5	<5	<5	<5	<5	<5	<5	<1
1,2-Dichlorobenzene	µg/L	5	**160**[#5]	**1500**	**15000**		<5	<5	<5	<5	<5	<5	<5	<1
1,3-Dichlorobenzene	µg/L	5	**260**[#5]				<5	<5	<5	<5	<5	<5	<5	<1
2-Chlorotoluene	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
Bromobenzene	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
Chlorobenzene	µg/L	5	**55**[#5]	**300**	**3000**		<5	<5	<5	<5	<5	<5	<5	<1
1,2,4-trimethylbenzene	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
1,3,5-Trimethylbenzene	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
Isopropylbenzene	µg/L	5	**30**[#5]				<5	<5	<5	<5	<5	<5	<5	<1
n-Butylbenzene	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
n-Propylbenzene	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
p-Isopropyltoluene	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
sec-Butylbenzene	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
Styrene	µg/L	5		**30**	**300**		<5	<5	<5	<5	<5	<5	<5	<1
tert-Butylbenzene	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
Methyl Ethyl Ketone	µg/L	50					<50	<50	<50	<50	<50	<50	<50	-
2-Hexanone	µg/L	50					<50	<50	<50	<50	<50	<50	<50	-
Methyl iso-butyl ketone	µg/L	50					<50	<50	<50	<50	<50	<50	<50	-
Vinyl acetate	µg/L	50					<50	<50	<50	<50	<50	<50	<50	-
1,1,1,2-Tetrachloroethane	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
1,1,2,2-Tetrachloroethane	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
1,1,1-Trichloroethane	µg/L	5	**270**[#5]				<5	<5	<5	<5	<5	<5	<5	<1
1,1,2-Trichloroethane	µg/L	5	**1900**				<5	<5	<5	<5	<5	<5	<5	<1
1,2,3-Trichloropropane	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
1,2-Dibromo-3-chloropropane	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
1,2-Dibromoethane	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
1,1-Dichloroethane	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
1,2-Dichloroethane	µg/L	5	**1900**[#5]	**3**	**30**		<5	<5	<5	<5	<5	<5	<5	<1
1,1-Dichloroethene	µg/L	5	**700**[#5]	**30**	**300**		<5	<5	<5	<5	<5	<5	<5	<1
1,2-Dichloroethene (Calculated)	µg/L			**60**	**600**		0	0	0	0	0	0	0	0
cis-1,2-Dichloroethene	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
trans-1,2-dichloroethene	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
1,2-Dichloropropane	µg/L	5	**900**[#5]				<5	<5	<5	<5	<5	<5	<5	<1
1,3-Dichloropropane	µg/L	5	**1100**[#5]				<5	<5	<5	<5	<5	<5	<5	<1
2,2-Dichloropropane	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
1,1-Dichloropropene	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
cis-1,3-Dichloropropene	µg/L	5	**0.8**[#5]	**100**	**1000**		<5	<5	<5	<5	<5	<5	<5	<1
trans-1,3-dichloropropene	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
cis-1,4-Dichloro-2-butene	µg/L	5					<5	<5	<5	<5	<5	<5	<5	-
trans-1,4-Dichloro-2-butene	µg/L	5					<5	<5	<5	<5	<5	<5	<5	-
Bromochloromethane	µg/L	1					-	-	-	-	-	-	-	<1
Bromodichloromethane	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
Bromoform	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
Bromomethane	µg/L	50		**1**	**10**		<50	<50	<50	<50	<50	<50	<50	<10

						Location_Code	SRT-BH409	SRT-BH419	SRT-BH420	SRT-BH426	SRT-GMW1A	SRT-GMW2A	SRT-GMW2A	SRT-GMW2A
						Sampled_Date_Time	02-11-18	28-10-18	02-11-18	28-10-18	28-10-18	28-10-18	28-10-18	28-10-18
						Field_ID	SRT-BH409	SRT-BH419	SRT-BH420	SRT-BH426	SRT-GMW1A	SRT-GMW2A	SRT-QCA200	SRT-QCB200
ChemName	**output unit**	**EQL**	95% Protection of Species ANZG 2018	ADWG 2011 Health	ADWG 2011 Health (x10)	NEPM 2013 Comm/Ind HSL D GW for Vapour Intrusion, Sand 2 4m								
Carbon disulfide	µg/L	5	**20**[#5]				<5	<5	<5	<5	<5	<5	<5	-
Carbon tetrachloride	µg/L	5	**240**[#5]	**3**	**30**		<5	<5	<5	<5	<5	<5	<5	<1
Chlorodibromomethane	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
Chloroethane	µg/L	50					<50	<50	<50	<50	<50	<50	<50	<10
Chloroform	µg/L	5	**370**[#5]				<5	<5	<5	<5	<5	14	14	16
Chloromethane	µg/L	50					<50	<50	<50	<50	<50	<50	<50	<10
Dibromomethane	µg/L	5					<5	<5	<5	<5	<5	<5	<5	<1
Dichlorodifluoromethane	µg/L	50					<50	<50	<50	<50	<50	<50	<50	<10
Hexachlorobutadiene	µg/L	5		**0.7**	**7**		<5	<5	<5	<5	<5	<5	<5	<1
Iodomethane	µg/L	5					<5	<5	<5	<5	<5	<5	<5	-
Pentachloroethane	µg/L	5	**80**[#5]				<5	<5	<5	<5	<5	<5	<5	-
Trichloroethene	µg/L	5	**330**[#5]				<5	<5	<5	<5	<5	<5	<5	<1
Tetrachloroethene	µg/L	5	**70**[#5]	**50**	**500**		<5	<5	<5	<5	<5	<5	<5	1
Trichlorofluoromethane	µg/L	50					<50	<50	<50	<50	<50	<50	<50	<10
Vinyl chloride	µg/L	50	**100**[#5]	**0.3**	**3**		<50	<50	<50	<50	<50	<50	<50	<10

Env Stds Comments

#1:PFAS National Environmental Management Plan (NEMP), (HEPA, Jan 2018)
#2:PFAS National Environmental Management Plan (NEMP), (HEPA, Jan 2018), 99% species protection applied for compounds with bioaccummulating nature
#3:US EPA RSL (2018) Guidelines for Tap Water
#4:Non-Limiting
#5:Unknown reliability value
#6:As Arsenic V
#7:As Arsenic III
#8:Cr Value as CrVI
#9:99% species protection applied for compounds with bioaccummulating nature
#10:Criteria for m-xylene, unknown reliability value

					Location_Code	SRT-BH408	SRT-BH415	SRT-BH415	SRT-BH415	SRT-BH416	SRT-BH417	SRT-BH421	SRT-BH422
					Sampled_Date_Time	21-10-18	21-10-18	21-10-18	21-10-18	21-10-18	21-10-18	21-10-18	21-10-18
					Field_ID	SRT_BH408	SRT_BH415	SRT_QC100	SRT_QC200	SRT_BH416	SRT_BH417	SRT_BH421	SRT_BH422
ChemName	**output unit**	**EQL**	NEPM 2013 Table 1A(2) Comm/Ind D Soil Vap VOCC HILs	NEPM 2013 Table 1A(5) Comm/Ind D Soil Vapour HSL for Vapour	NEPM 2013 Table 1A(5) Comm/Ind D Soil Vapour HSL for Vapour								
General													
Temp	oC	0.1				21	21	21	-	21	21	21	21
Permanent Gases													
Helium	mg/m3	8				<16#1	17	16	-	<20#1	<16#1	<16#1	<16#1
Carbon Dioxide	mg/m3	90				13,100	42,700	43,100	-	22,300	24,500	14,800	15,800
Carbon Monoxide	mg/m3	5				<10#1	<10#1	<10#1	-	<12#1	<10#1	<10#1	<10#1
Hydrogen	mg/m3	4				<8#1	<8#1	<8#1	-	<10#1	<8#1	<8#1	<8#1
Oxygen	mg/m3	1310				227,000	173,000	175,000	-	151,000	172,000	201,000	201,000
Vacuum													
Vacuum before Analysis	Hg"					-	-	-	-5	-	-	-	-
Vacuum before Shipment	Hg"					-	-	-	-30	-	-	-	-
Receipt Vacuum (inch HgG)	inch HgG	0.03				3.63	3.48	2.63	-	9.45	0.94	6.05	3.22
TRH - HSL													
TRH >C9-C10 Aromatic	mg/m3	0.1				-	-	-	<0.1	-	-	-	-
TRH C5 - C8 Aliphatic	mg/m3	0.2				-	-	-	0.86	-	-	-	-
TRH C9 - C12 Aliphatic	mg/m3	0.05				-	-	-	<0.05	-	-	-	-
TRH C6 - C10 Fraction F1	mg/m3	20				<20	<20	<20	-	<20	<20	<20	<20
TRH C6 - C10 Fraction Less BTEX F1	mg/m3	20		**680**	**2800**	<20	<20	<20	0.57	<20	<20	<20	<20
TRH >C10 - C16 Fraction F2	mg/m3	40				<40	<40	<40	-	<40	<40	<40	<40
TRH >C10 - C16 Fraction Less Naphthalene (F2)	mg/m3	40		**500**	**2400**	<40	<40	<40	<0.04	<40	<40	<40	<40
TPH Group													
TRH C6 - C9 Fraction	mg/m3	20				<20	<20	<20	-	<20	<20	<20	<20
TRH C10 - C14 Fraction	mg/m3	35				<35	<35	<35	-	<35	<35	<35	<35
BTEX													
Benzene	mg/m3	0.1		**4**	**10**	<0.1	<0.1	<0.1	<0.0016	<0.1	<0.1	<0.1	<0.1
Toluene	mg/m3	0.19		**4800**	**16000**	<0.19	<0.19	<0.19	0.004	<0.19	<0.19	<0.19	<0.19
Ethylbenzene	mg/m3	0.22		**1300**	**4600**	<0.22	<0.22	<0.22	<0.0022	<0.22	<0.22	<0.22	<0.22
Xylenes (m & p)	mg/m3	0.43				<0.43	<0.43	<0.43	<0.0043	<0.43	<0.43	<0.43	<0.43
Xylene (o)	mg/m3	0.22				<0.22	<0.22	<0.22	<0.0022	<0.22	<0.22	<0.22	<0.22
Xylenes (Sum of total) (Lab Reported)	mg/m3	0.65		**840**	**3200**	<0.65	<0.65	<0.65	-	<0.65	<0.65	<0.65	<0.65
PAH													
Naphthalene	mg/m3	0.1		**3**	**15**	<0.1	<0.1	<0.1	<0.0026	<0.1	<0.1	<0.1	<0.1
Volatile Organic Compounds													
1,4-Dichlorobenzene	mg/m3	0.3				<0.3	<0.3	<0.3	<0.003	<0.3	<0.3	<0.3	<0.3
1,4-Dioxane	mg/m3	0.18				<0.18	<0.18	<0.18	<0.0018	<0.18	<0.18	<0.18	<0.18
1-Methyl-4 ethylbenzene	mg/m3	0.24				<0.24	<0.24	<0.24	<0.0025	<0.24	<0.24	<0.24	<0.24
2,2,4 trimethylpentane	mg/m3	0.23				<0.23	<0.23	<0.23	-	<0.23	<0.23	<0.23	<0.23
Cyclohexane	mg/m3	0.17				<0.17	<0.17	<0.17	<0.0017	<0.17	<0.17	<0.17	<0.17
Ethanol	mg/m3	0.009				-	-	-	<0.0094	-	-	-	-
Ethyl Acetate	mg/m3	0.18				<0.18	<0.18	<0.18	<0.0018	<0.18	<0.18	<0.18	<0.18
Freon 113	mg/m3	0.38				<0.38	<0.38	<0.38	<0.0038	<0.38	<0.38	<0.38	<0.38
Freon 114	mg/m3	0.35				<0.35	<0.35	<0.35	<0.0025	<0.35	<0.35	<0.35	<0.35
Heptane	mg/m3	0.2				<0.2	<0.2	<0.2	<0.002	<0.2	<0.2	<0.2	<0.2
Hexane	mg/m3	0.18				<0.18	<0.18	<0.18	<0.0018	<0.18	<0.18	<0.18	<0.18
2-Propanol	mg/m3	0.12				<0.12	<0.12	<0.12	<0.0123	<0.12	<0.12	<0.12	<0.12
Methyl Methacrylate	mg/m3	0.002				-	-	-	<0.002	-	-	-	-
Propene	mg/m3	0.09				<0.09	<0.09	<0.09	0.007	<0.09	<0.09	<0.09	<0.09
Tetrahydrofuran	mg/m3	0.15				<0.15	<0.15	<0.15	<0.0015	<0.15	<0.15	<0.15	<0.15
1,2,4-Trichlorobenzene	mg/m3	0.37				<0.37	<0.37	<0.37	<0.0037	<0.37	<0.37	<0.37	<0.37
1,2-Dichlorobenzene	mg/m3	0.3				<0.3	<0.3	<0.3	<0.003	<0.3	<0.3	<0.3	<0.3
1,3-Dichlorobenzene	mg/m3	0.3				<0.3	<0.3	<0.3	<0.003	<0.3	<0.3	<0.3	<0.3
Chlorobenzene	mg/m3	0.23				<0.23	<0.23	<0.23	<0.0023	<0.23	<0.23	<0.23	<0.23
1,2,4-trimethylbenzene	mg/m3	0.24				<0.24	<0.24	<0.24	<0.0025	<0.24	<0.24	<0.24	<0.24
1,3,5-Trimethylbenzene	mg/m3	0.24				<0.24	<0.24	<0.24	<0.0025	<0.24	<0.24	<0.24	<0.24
Styrene	mg/m3	0.21				<0.21	<0.21	<0.21	<0.0021	<0.21	<0.21	<0.21	<0.21
Methyl Ethyl Ketone	mg/m3	0.15				<0.15	<0.15	<0.15	<0.0015	<0.15	<0.15	<0.15	<0.15
2-Hexanone	mg/m3	0.2				<0.2	<0.2	<0.2	<0.002	<0.2	<0.2	<0.2	<0.2
Methyl iso-butyl ketone	mg/m3	0.2				<0.2	<0.2	<0.2	<0.002	<0.2	<0.2	<0.2	<0.2
Acetone	mg/m3	0.12				<0.12	<0.12	<0.12	0.03	<0.12	<0.12	<0.12	<0.12
Methyl-t-butyl ether	mg/m3	0.18				<0.18	<0.18	<0.18	<0.0018	<0.18	<0.18	<0.18	<0.18
Vinyl acetate	mg/m3	0.18				<0.18	<0.18	<0.18	<0.0018	<0.18	<0.18	<0.18	<0.18
1,1,2,2-Tetrachloroethane	mg/m3	0.34				<0.34	<0.34	<0.34	<0.0034	<0.34	<0.34	<0.34	<0.34
1,1,1-Trichloroethane	mg/m3	0.27	**230**			<0.27	<0.27	<0.27	0.007	<0.27	<0.27	<0.27	<0.27
1,1,2-Trichloroethane	mg/m3	0.27				<0.27	<0.27	<0.27	<0.0027	<0.27	<0.27	<0.27	<0.27
1,2-Dibromoethane	mg/m3	0.38				<0.38	<0.38	<0.38	<0.0038	<0.38	<0.38	<0.38	<0.38
1,1-Dichloroethane	mg/m3	0.2				<0.2	<0.2	<0.2	<0.002	<0.2	<0.2	<0.2	<0.2
1,2-Dichloroethane	mg/m3	0.2				<0.2	<0.2	<0.2	<0.002	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethene	mg/m3	0.2				<0.2	<0.2	<0.2	<0.002	<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene	mg/m3	0.02	**0.3**			<0.02	<0.02	<0.02	<0.002	<0.02	<0.02	<0.02	<0.02
trans-1,2-dichloroethene	mg/m3	0.2				<0.2	<0.2	<0.2	<0.002	<0.2	<0.2	<0.2	<0.2
1,2-Dichloropropane	mg/m3	0.23				<0.23	<0.23	<0.23	<0.0023	<0.23	<0.23	<0.23	<0.23
cis-1,3-Dichloropropene	mg/m3	0.23				<0.23	<0.23	<0.23	<0.0023	<0.23	<0.23	<0.23	<0.23
trans-1,3-dichloropropene	mg/m3	0.23				<0.23	<0.23	<0.23	<0.0023	<0.23	<0.23	<0.23	<0.23
1,3-Butadiene	mg/m3	0.11				<0.11	<0.11	<0.11	<0.0011	<0.11	<0.11	<0.11	<0.11
Acrolein	mg/m3	0.0011				-	-	-	<0.0011	-	-	-	-
Allyl chloride	mg/m3	0.16				<0.16	<0.16	<0.16	-	<0.16	<0.16	<0.16	<0.16
Benzyl chloride	mg/m3	0.26				<0.26	<0.26	<0.26	<0.0026	<0.26	<0.26	<0.26	<0.26
Bromodichloromethane	mg/m3	0.34				<0.34	<0.34	<0.34	<0.0034	<0.34	<0.34	<0.34	<0.34
Bromoform	mg/m3	0.52				<0.52	<0.52	<0.52	<0.0052	<0.52	<0.52	<0.52	<0.52
Bromomethane	mg/m3	0.19				<0.19	<0.19	<0.19	<0.0019	<0.19	<0.19	<0.19	<0.19
Carbon tetrachloride	mg/m3	0.31				<0.31	<0.31	<0.31	<0.0031	<0.31	<0.31	<0.31	<0.31
Chlorodibromomethane	mg/m3	0.43				<0.43	<0.43	<0.43	<0.0016	<0.43	<0.43	<0.43	<0.43
Chloroethane	mg/m3	0.13				<0.13	<0.13	<0.13	<0.0013	<0.13	<0.13	<0.13	<0.13
Chloroform	mg/m3	0.24				<0.24	<0.24	<0.24	0.1	<0.24	<0.24	<0.24	<0.24
Chloromethane	mg/m3	0.1				<0.1	<0.1	<0.1	<0.001	<0.1	<0.1	<0.1	<0.1
Dichlorodifluoromethane	mg/m3	0.25				3.08	<0.25	<0.25	0.004	<0.25	<0.25	<0.25	<0.25
Dichloromethane	mg/m3	0.17				<0.17	<0.17	<0.17	<0.0172	<0.17	<0.17	<0.17	<0.17
Hexachlorobutadiene	mg/m3	0.53				<0.53	<0.53	<0.53	<0.0053	<0.53	<0.53	<0.53	<0.53
Trichloroethene	mg/m3	0.005	**0.08**			0.007	<0.005	<0.005	<0.0027	<0.005	<0.005	<0.005	<0.005
Tetrachloroethene	mg/m3	0.34	**8**			<0.34	2.51	2.52	1.7	**8.4**	<0.34	<0.34	<0.34
Trichlorofluoromethane	mg/m3	0.28				1.12	<0.28	<0.28	0.11	<0.28	<0.28	<0.28	<0.28
Vinyl bromide (bromoethene)	mg/m3	0.22				<0.22	<0.22	<0.22	-	<0.22	<0.22	<0.22	<0.22
Vinyl chloride	mg/m3	0.0051	**0.1**			<0.0051	<0.0051	<0.0051	<0.0013	<0.0051	<0.0051	<0.0051	<0.0051

Data Comments

#1 Reported Analyte LOR is higher than Requested Analyte LOR

					Location_Code	SRT-BH408	SRT-BH415	SRT-BH415	SRT-BH415	SRT-BH416	SRT-BH417	SRT-BH421	SRT-BH422
					Sampled_Date_Time	21-10-18	21-10-18	21-10-18	21-10-18	21-10-18	21-10-18	21-10-18	21-10-18
					Field_ID	SRT_BH408	SRT_BH415	SRT_QC100	SRT_QC200	SRT_BH416	SRT_BH417	SRT_BH421	SRT_BH422
ChemName	**Units**	**EQL**	NEPM 2013 Table 1A(2) Resi B Soil Vap VOCC HILs	NEPM 2013 Table 1A(5) Resi A/B Soil Vapour HSL for Vapour Intrusion, Sand 0-1m	NEPM 2013 Table 1A(5) Resi A/B Soil Vapour HSL for Vapour Intrusion, Sand 1-2m								
General													
Temp	oC	0.1				21	21	21	-	21	21	21	21
Permanent Gases													
Helium	mg/m3	8				<16[#1]	17	16	-	<20[#1]	<16[#1]	<16[#1]	<16[#1]
Carbon Dioxide	mg/m3	90				13,100	42,700	43,100	-	22,300	24,500	14,800	15,800
Carbon Monoxide	mg/m3	5				<10[#1]	<10[#1]	<10[#1]	-	<12[#1]	<10[#1]	<10[#1]	<10[#1]
Hydrogen	mg/m3	4				<8[#1]	<8[#1]	<8[#1]	-	<10[#1]	<8[#1]	<8[#1]	<8[#1]
Oxygen	mg/m3	1310				227,000	173,000	175,000	-	151,000	172,000	201,000	201,000
Vacuum													
Vacuum before Analysis	Hg"					-	-	-	-5	-	-	-	-
Vacuum before Shipment	Hg"					-	-	-	-30	-	-	-	-
Receipt Vacuum (inch HgG)	inch HgG	0.03				3.63	3.48	2.63	-	9.45	0.94	6.05	3.22
TRH - HSL													
TRH >C9-C10 Aromatic	mg/m3	0.1				-	-	-	<0.1	-	-	-	-
TRH C5 - C8 Aliphatic	mg/m3	0.2				-	-	-	0.86	-	-	-	-
TRH C9 - C12 Aliphatic	mg/m3	0.05				-	-	-	<0.05	-	-	-	-
TRH C6 - C10 Fraction F1	mg/m3	20				<20	<20	<20	-	<20	<20	<20	<20
TRH C6 - C10 Fraction Less BTEX F1	mg/m3	20		**180**	**640**	<20	<20	<20	0.57	<20	<20	<20	<20
TRH >C10 - C16 Fraction F2	mg/m3	40				<40	<40	<40	-	<40	<40	<40	<40
TRH >C10 - C16 Fraction Less Naphthalene (F2)	mg/m3	40		**130**	**560**	<40	<40	<40	<0.04	<40	<40	<40	<40
TPH Group													
TRH C6 - C9 Fraction	mg/m3	20				<20	<20	<20	-	<20	<20	<20	<20
TRH C10 - C14 Fraction	mg/m3	35				<35	<35	<35	-	<35	<35	<35	<35
BTEX													
Benzene	mg/m3	0.1		**1**	**3**	<0.1	<0.1	<0.1	<0.0016	<0.1	<0.1	<0.1	<0.1
Toluene	mg/m3	0.19		**1300**	**3800**	<0.19	<0.19	<0.19	0.004	<0.19	<0.19	<0.19	<0.19
Ethylbenzene	mg/m3	0.22		**330**	**1100**	<0.22	<0.22	<0.22	<0.0022	<0.22	<0.22	<0.22	<0.22
Xylenes (m & p)	mg/m3	0.43				<0.43	<0.43	<0.43	<0.0043	<0.43	<0.43	<0.43	<0.43
Xylene (o)	mg/m3	0.22				<0.22	<0.22	<0.22	<0.0022	<0.22	<0.22	<0.22	<0.22
Xylenes (Sum of total) (Lab Reported)	mg/m3	0.65		**220**	**750**	<0.65	<0.65	<0.65	-	<0.65	<0.65	<0.65	<0.65
PAH													
Naphthalene	mg/m3	0.1		**0.8**	**3**	<0.1	<0.1	<0.1	<0.0026	<0.1	<0.1	<0.1	<0.1
Volatile Organic Compounds													
1,4-Dichlorobenzene	mg/m3	0.3				<0.3	<0.3	<0.3	<0.003	<0.3	<0.3	<0.3	<0.3
1,4-Dioxane	mg/m3	0.18				<0.18	<0.18	<0.18	<0.0018	<0.18	<0.18	<0.18	<0.18
1-Methyl-4 ethylbenzene	mg/m3	0.24				<0.24	<0.24	<0.24	<0.0025	<0.24	<0.24	<0.24	<0.24
2,2,4 trimethylpentane	mg/m3	0.23				<0.23	<0.23	<0.23	-	<0.23	<0.23	<0.23	<0.23
Cyclohexane	mg/m3	0.17				<0.17	<0.17	<0.17	<0.0017	<0.17	<0.17	<0.17	<0.17
Ethanol	mg/m3	0.009				-	-	-	<0.0094	-	-	-	-
Ethyl Acetate	mg/m3	0.18				<0.18	<0.18	<0.18	<0.0018	<0.18	<0.18	<0.18	<0.18
Freon 113	mg/m3	0.38				<0.38	<0.38	<0.38	<0.0038	<0.38	<0.38	<0.38	<0.38
Freon 114	mg/m3	0.35				<0.35	<0.35	<0.35	<0.0025	<0.35	<0.35	<0.35	<0.35
Heptane	mg/m3	0.2				<0.2	<0.2	<0.2	<0.002	<0.2	<0.2	<0.2	<0.2
Hexane	mg/m3	0.18				<0.18	<0.18	<0.18	<0.0018	<0.18	<0.18	<0.18	<0.18
2-Propanol	mg/m3	0.12				<0.12	<0.12	<0.12	<0.0123	<0.12	<0.12	<0.12	<0.12
Methyl Methacrylate	mg/m3	0.002				-	-	-	<0.002	-	-	-	-
Propene	mg/m3	0.09				<0.09	<0.09	<0.09	0.007	<0.09	<0.09	<0.09	<0.09
Tetrahydrofuran	mg/m3	0.15				<0.15	<0.15	<0.15	<0.0015	<0.15	<0.15	<0.15	<0.15
1,2,4-Trichlorobenzene	mg/m3	0.37				<0.37	<0.37	<0.37	<0.0037	<0.37	<0.37	<0.37	<0.37
1,2-Dichlorobenzene	mg/m3	0.3				<0.3	<0.3	<0.3	<0.003	<0.3	<0.3	<0.3	<0.3
1,3-Dichlorobenzene	mg/m3	0.3				<0.3	<0.3	<0.3	<0.003	<0.3	<0.3	<0.3	<0.3
Chlorobenzene	mg/m3	0.23				<0.23	<0.23	<0.23	<0.0023	<0.23	<0.23	<0.23	<0.23
1,2,4-trimethylbenzene	mg/m3	0.24				<0.24	<0.24	<0.24	<0.0025	<0.24	<0.24	<0.24	<0.24
1,3,5-Trimethylbenzene	mg/m3	0.24				<0.24	<0.24	<0.24	<0.0025	<0.24	<0.24	<0.24	<0.24
Styrene	mg/m3	0.21				<0.21	<0.21	<0.21	<0.0021	<0.21	<0.21	<0.21	<0.21
Methyl Ethyl Ketone	mg/m3	0.15				<0.15	<0.15	<0.15	<0.0015	<0.15	<0.15	<0.15	<0.15
2-Hexanone	mg/m3	0.2				<0.2	<0.2	<0.2	<0.002	<0.2	<0.2	<0.2	<0.2
Methyl iso-butyl ketone	mg/m3	0.2				<0.2	<0.2	<0.2	<0.002	<0.2	<0.2	<0.2	<0.2
Acetone	mg/m3	0.12				<0.12	<0.12	<0.12	0.03	<0.12	<0.12	<0.12	<0.12
Methyl-t-butyl ether	mg/m3	0.18				<0.18	<0.18	<0.18	<0.0018	<0.18	<0.18	<0.18	<0.18
Vinyl acetate	mg/m3	0.18				<0.18	<0.18	<0.18	<0.0018	<0.18	<0.18	<0.18	<0.18
1,1,2,2-Tetrachloroethane	mg/m3	0.34				<0.34	<0.34	<0.34	<0.0034	<0.34	<0.34	<0.34	<0.34
1,1,1-Trichloroethane	mg/m3	0.27	**60**			<0.27	<0.27	<0.27	0.007	<0.27	<0.27	<0.27	<0.27
1,1,2-Trichloroethane	mg/m3	0.27				<0.27	<0.27	<0.27	<0.0027	<0.27	<0.27	<0.27	<0.27
1,2-Dibromoethane	mg/m3	0.38				<0.38	<0.38	<0.38	<0.0038	<0.38	<0.38	<0.38	<0.38
1,1-Dichloroethane	mg/m3	0.2				<0.2	<0.2	<0.2	<0.002	<0.2	<0.2	<0.2	<0.2
1,2-Dichloroethane	mg/m3	0.2				<0.2	<0.2	<0.2	<0.002	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethene	mg/m3	0.2				<0.2	<0.2	<0.2	<0.002	<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene	mg/m3	0.02	**0.08**			<0.02	<0.02	<0.02	<0.002	<0.02	<0.02	<0.02	<0.02
trans-1,2-dichloroethene	mg/m3	0.2				<0.2	<0.2	<0.2	<0.002	<0.2	<0.2	<0.2	<0.2
1,2-Dichloropropane	mg/m3	0.23				<0.23	<0.23	<0.23	<0.0023	<0.23	<0.23	<0.23	<0.23
cis-1,3-Dichloropropene	mg/m3	0.23				<0.23	<0.23	<0.23	<0.0023	<0.23	<0.23	<0.23	<0.23
trans-1,3-dichloropropene	mg/m3	0.23				<0.23	<0.23	<0.23	<0.0023	<0.23	<0.23	<0.23	<0.23
1,3-Butadiene	mg/m3	0.11				<0.11	<0.11	<0.11	<0.0011	<0.11	<0.11	<0.11	<0.11
Acrolein	mg/m3	0.0011				-	-	-	<0.0011	-	-	-	-
Allyl chloride	mg/m3	0.16				<0.16	<0.16	<0.16	-	<0.16	<0.16	<0.16	<0.16
Benzyl chloride	mg/m3	0.26				<0.26	<0.26	<0.26	<0.0026	<0.26	<0.26	<0.26	<0.26
Bromodichloromethane	mg/m3	0.34				<0.34	<0.34	<0.34	<0.0034	<0.34	<0.34	<0.34	<0.34
Bromoform	mg/m3	0.52				<0.52	<0.52	<0.52	<0.0052	<0.52	<0.52	<0.52	<0.52
Bromomethane	mg/m3	0.19				<0.19	<0.19	<0.19	<0.0019	<0.19	<0.19	<0.19	<0.19
Carbon tetrachloride	mg/m3	0.31				<0.31	<0.31	<0.31	<0.0031	<0.31	<0.31	<0.31	<0.31
Chlorodibromomethane	mg/m3	0.43				<0.43	<0.43	<0.43	<0.0016	<0.43	<0.43	<0.43	<0.43
Chloroethane	mg/m3	0.13				<0.13	<0.13	<0.13	<0.0013	<0.13	<0.13	<0.13	<0.13
Chloroform	mg/m3	0.24				<0.24	<0.24	<0.24	0.1	<0.24	<0.24	<0.24	<0.24
Chloromethane	mg/m3	0.1				<0.1	<0.1	<0.1	<0.001	<0.1	<0.1	<0.1	<0.1
Dichlorodifluoromethane	mg/m3	0.25				3.08	<0.25	<0.25	0.004	<0.25	<0.25	<0.25	<0.25
Dichloromethane	mg/m3	0.17				<0.17	<0.17	<0.17	<0.0172	<0.17	<0.17	<0.17	<0.17
Hexachlorobutadiene	mg/m3	0.53				<0.53	<0.53	<0.53	<0.0053	<0.53	<0.53	<0.53	<0.53
Trichloroethene	mg/m3	0.005	**0.02**			0.007	<0.005	<0.005	<0.0027	<0.005	<0.005	<0.005	<0.005
Tetrachloroethene	mg/m3	0.34	**2**			<0.34	**2.51**	**2.52**	**1.7**	**8.4**	<0.34	<0.34	<0.34
Trichlorofluoromethane	mg/m3	0.28				1.12	<0.28	<0.28	0.11	<0.28	<0.28	<0.28	<0.28
Vinyl bromide (bromoethene)	mg/m3	0.22				<0.22	<0.22	<0.22	-	<0.22	<0.22	<0.22	<0.22
Vinyl chloride	mg/m3	0.0051	**0.03**			<0.0051	<0.0051	<0.0051	<0.0013	<0.0051	<0.0051	<0.0051	<0.0051

Data Comments

#1 Reported Analyte LOR is higher than Requested Analyte LOR

Field_ID	RB100	RB103	RB104	RB105	SRT-RB106	SRT-RB107	SRT-RB110
Sampled_Date_Time	06-10-18	07-10-18	13-10-18	14-10-18	20-10-18	27-10-18	28-10-18
Lab_Report_Number	ES1829955	ES1829955	ES1830703	ES1830703	ES1831696	ES1832159	ES1832159

ChemName	output unit	EQL							
TRH - HSL									
TRH C6 - C10 Fraction F1	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
TRH C6 - C10 Fraction Less BTEX F1	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
TRH >C10 - C16 Fraction F2	mg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH >C10 - C16 Fraction Less Naphthalene (F2)	mg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH >C16 - C34 Fraction F3	mg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH >C34 - C40 Fraction F4	mg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH+C10 - C40 (Sum of total) (Lab Reported)	mg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TPH Group - Waste Classification									
TRH C6 - C9 Fraction	mg/L	0.02	**0.02**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
TRH C10 - C14 Fraction	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TRH C15 - C28 Fraction	mg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C29 - C36 Fraction	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
TRH+C10 - C36 (Sum of total) (Lab Reported)	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
BTEX									
Benzene	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Toluene	µg/L	2	<2	<2	<2	<2	<2	<2	<2
Ethylbenzene	µg/L	2	<2	<2	<2	<2	<2	<2	<2
Xylenes (m & p)	µg/L	2	<2	<2	<2	<2	<2	<2	<2
Xylene (o)	µg/L	2	<2	<2	<2	<2	<2	<2	<2
Xylenes (Sum of total) (Lab Reported)	µg/L	2	<2	<2	<2	<2	<2	<2	<2
Total BTEX	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Heavy Metals									
Arsenic	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Cadmium	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Copper	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Lead	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Mercury	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Zinc	µg/L	5	<5	<5	<5	<5	<5	<5	<5
Organochlorine Pesticides									
a-BHC	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Aldrin	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Aldrin & Dieldrin (Sum of total) (Lab Reported)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
b-BHC	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-Chlordane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-Chlordane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlordane (Sum of total)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
d-BHC	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
DDD	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
DDE	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
DDT	µg/L	2	<2	<2	<2	<2	<2	<2	<2
DDT+DDE+DDD (Sum of total) (Lab Reported)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan I	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan II	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan sulphate	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin aldehyde	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin ketone	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
g-BHC	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	µg/L	2	<2	<2	<2	<2	<2	<2	<2
Organophosphorous Pesticides									
Azinphos-methyl	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromophos-ethyl	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbophenothion	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorfenvinphos	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyriphos	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyriphos-methyl	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Demeton-s-methyl	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichlorvos	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenamiphos	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenthion	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Malathion	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion-methyl	µg/L	2	<2	<2	<2	<2	<2	<2	<2
Monocrotophos	µg/L	2	<2	<2	<2	<2	<2	<2	<2
Parathion	µg/L	2	<2	<2	<2	<2	<2	<2	<2
Pirimphos-ethyl	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Prothiofos	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PAH									
Acenaphthene	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Acenaphthylene	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Anthracene	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Benz(a)anthracene	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Benzo(a)pyrene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ (lower bound)*	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)&(j)fluoranthene	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Benzo(g,h,i)perylene	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Benzo(k)fluoranthene	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Chrysene	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Dibenz(a,h)anthracene	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Fluoranthene	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Fluorene	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Phenanthrene	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Pyrene	µg/L	1	<1	<1	<1	<1	<1	<1	<1
PAH (Sum of Common 16 PAHs - Lab Reported)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Polychlorinated Biphenyls									
PCB (Sum of Total-Lab Reported)	µg/L	1	<1	<1	<1	<1	<1	<1	<1
Volatile Organic Compounds									
1,4-Dichlorobenzene	µg/L	5	<5	<5	-	-	-	-	-
4-Chlorotoluene	µg/L	5	<5	<5	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/L	5	<5	<5	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/L	5	<5	<5	-	-	-	-	-
1,2-Dichlorobenzene	µg/L	5	<5	<5	-	-	-	-	-
1,3-Dichlorobenzene	µg/L	5	<5	<5	-	-	-	-	-
2-Chlorotoluene	µg/L	5	<5	<5	-	-	-	-	-
Bromobenzene	µg/L	5	<5	<5	-	-	-	-	-
Chlorobenzene	µg/L	5	<5	<5	-	-	-	-	-

Field_ID	RB100	RB103	RB104	RB105	SRT-RB106	SRT-RB107	SRT-RB110
Sampled_Date_Time	06-10-18	07-10-18	13-10-18	14-10-18	20-10-18	27-10-18	28-10-18
Lab_Report_Number	ES1829955	ES1829955	ES1830703	ES1830703	ES1831696	ES1832159	ES1832159

ChemName	output unit	EQL							
1,2,4-trimethylbenzene	µg/L	5	<5	<5	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/L	5	<5	<5	-	-	-	-	-
Isopropylbenzene	µg/L	5	<5	<5	-	-	-	-	-
n-Butylbenzene	µg/L	5	<5	<5	-	-	-	-	-
n-Propylbenzene	µg/L	5	<5	<5	-	-	-	-	-
p-Isopropyltoluene	µg/L	5	<5	<5	-	-	-	-	-
sec-Butylbenzene	µg/L	5	<5	<5	-	-	-	-	-
Styrene	µg/L	5	<5	<5	-	-	-	-	-
tert-Butylbenzene	µg/L	5	<5	<5	-	-	-	-	-
Methyl Ethyl Ketone	µg/L	50	<50	<50	-	-	-	-	-
2-Hexanone	µg/L	50	<50	<50	-	-	-	-	-
Methyl iso-butyl ketone	µg/L	50	<50	<50	-	-	-	-	-
Vinyl acetate	µg/L	50	<50	<50	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/L	5	<5	<5	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/L	5	<5	<5	-	-	-	-	-
1,1,1-Trichloroethane	µg/L	5	<5	<5	-	-	-	-	-
1,1,2-Trichloroethane	µg/L	5	<5	<5	-	-	-	-	-
1,2,3-Trichloropropane	µg/L	5	<5	<5	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/L	5	<5	<5	-	-	-	-	-
1,2-Dibromoethane	µg/L	5	<5	<5	-	-	-	-	-
1,1-Dichloroethane	µg/L	5	<5	<5	-	-	-	-	-
1,2-Dichloroethane	µg/L	5	<5	<5	-	-	-	-	-
1,1-Dichloroethene	µg/L	5	<5	<5	-	-	-	-	-
cis-1,2-Dichloroethene	µg/L	5	<5	<5	-	-	-	-	-
trans-1,2-dichloroethene	µg/L	5	<5	<5	-	-	-	-	-
1,2-Dichloropropane	µg/L	5	<5	<5	-	-	-	-	-
1,3-Dichloropropane	µg/L	5	<5	<5	-	-	-	-	-
2,2-Dichloropropane	µg/L	5	<5	<5	-	-	-	-	-
1,1-Dichloropropene	µg/L	5	<5	<5	-	-	-	-	-
cis-1,3-Dichloropropene	µg/L	5	<5	<5	-	-	-	-	-
trans-1,3-dichloropropene	µg/L	5	<5	<5	-	-	-	-	-
cis-1,4-Dichloro-2-butene	µg/L	5	<5	<5	-	-	-	-	-
trans-1,4-Dichloro-2-butene	µg/L	5	<5	<5	-	-	-	-	-
Bromodichloromethane	µg/L	5	<5	<5	-	-	-	-	-
Bromoform	µg/L	5	<5	<5	-	-	-	-	-
Bromomethane	µg/L	50	<50	<50	-	-	-	-	-
Carbon disulfide	µg/L	5	<5	<5	-	-	-	-	-
Carbon tetrachloride	µg/L	5	<5	<5	-	-	-	-	-
Chlorodibromomethane	µg/L	5	<5	<5	-	-	-	-	-
Chloroethane	µg/L	50	<50	<50	-	-	-	-	-
Chloroform	µg/L	5	<5	<5	-	-	-	-	-
Chloromethane	µg/L	50	<50	<50	-	-	-	-	-
Dibromomethane	µg/L	5	<5	<5	-	-	-	-	-
Dichlorodifluoromethane	µg/L	50	<50	<50	-	-	-	-	-
Hexachlorobutadiene	µg/L	5	<5	<5	-	-	-	-	-
Iodomethane	µg/L	5	<5	<5	-	-	-	-	-
Pentachloroethane	µg/L	5	<5	<5	-	-	-	-	-
Trichloroethene	µg/L	5	<5	<5	-	-	-	-	-
Tetrachloroethene	µg/L	5	<5	<5	-	-	-	-	-
Trichlorofluoromethane	µg/L	50	<50	<50	-	-	-	-	-
Vinyl chloride	µg/L	50	<50	<50	-	-	-	-	-

GOLDER Douglas Partners Geotechnics | Environment | Groundwater

Table H: Soil Trip Blanks Spikes

Sydney Metro Authority

Test	Trip Blank									
Field_ID	Trip Blank	Trip Blank TB100	Trip Blank 104	SRT-TB106	SRT-TB107	Trip Spike 8	TSC	% recovery	Trip Spike TS100	TSC
Sampled_Date_Time	10/5/2018	10/5/2018	10/12/2018	10/15/2018	10/26/2018	10/2/2018			10/2/2018	
Lab_Report_Number	ES1829955	ES1829955	ES1830703	ES1831696	ES1832159	ES1829955			ES1829955	
ChemName	**output unit**	**EQL**									
TRH										
TRH C6 - C9 Fraction	mg/kg	10	<10	<10	<10	<10	<10	25	34	74%	18	18
TRH C6 - C10 Fraction F1	mg/kg	10	<10	<10	<10	<10	<10	29	40	73%	21	21
BTEX										
Benzene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2
Toluene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.9	8.3	71%	4.3	4.3
Ethylbenzene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	1.2	75%	0.6	0.6
Xylenes (m & p)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.4	5.8	76%	3.2	3.1
Xylene (o)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.9	2.4	79%	1.4	1.4
PAH										
Naphthalene	mg/kg	1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1

Test	Trip Spike									
Field_ID	% recovery	Trip spike 104	TSC	% recovery	SRT-TS106	TSC	% recovery	SRT-TS107	TSC	% recovery
Sampled_Date_Time		10/8/2018			10/15/2018			10/22/2018		
Lab_Report_Number		ES1830703			ES1831696			ES1832159		

ChemName	output unit	EQL									
TRH											
TRH C6 - C9 Fraction	mg/kg	10	100%	11	12	92%	17	31	55%	43	43	100%
TRH C6 - C10 Fraction F1	mg/kg	10	100%	15	16	94%	23	40	58%	58	57	102%
BTEX											
Benzene	mg/kg	0.2	-	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	0.2	-
Toluene	mg/kg	0.5	100%	3.4	3.8	89%	4.2	8.9	47%	13	12.9	101%
Ethylbenzene	mg/kg	0.5	100%	<0.5	<0.5	-	0.8	1.5	53%	1.8	1.8	100%
Xylenes (m & p)	mg/kg	0.5	103%	2.3	2.5	92%	4.6	7.7	60%	9.5	9.4	101%
Xylene (o)	mg/kg	0.5	100%	0.9	1	90%	2.4	3.5	69%	3.9	3.9	100%
PAH											
Naphthalene	mg/kg	1	-	<1	<1	-	<1	<1	-	<1	<1	-

Table I: Water Trip Blanks Spikes

Field_ID	SRT-TB200	SRT-TB200	SRT-TS200	Spike	% recovery	SRT-TS200	Spike	% recovery
Sampled_Date_Time	10/30/2018	10/31/2018	10/29/2018			10/30/2018		
Lab_Report_Number	ES1832164	ES1832698	ES1832698			ES1832164		
ChemName	**output unit**	**EQL**								
TRH - HSL										
TRH C6 - C10 Fraction F1	mg/L	0.02	<0.02	<0.02	-	-	-	-	-	-
TRH C6 - C10 Fraction Less BTEX F1	mg/L	0.02	<0.02	<0.02	-	-	-	-	-	-
TRH C6 - C9 Fraction	mg/L	0.02	<0.02	<0.02	-	-	-	-	-	-
BTEX										
Benzene	µg/L	1	<1	<1	15	20	75%	14	20	70%
Toluene	µg/L	2	<2	<2	14	20	70%	16	20	80%
Ethylbenzene	µg/L	2	<2	<2	14	20	70%	16	20	80%
Xylenes (m & p)	µg/L	2	<2	<2	14	20	70%	16	20	80%
Xylene (o)	µg/L	2	<2	<2	16	20	80%	15	20	75%
PAH										
Naphthalene	µg/L	5	<5	<5	18	20	90%	17	20	85%

FIGURES

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6247 603

LEGEND

- Site boundary
- Client Owned (XX/XXXXXX - Lot/DP)
- Church (XX/XXXXXX - Lot/DP)

0 60

1:750 METRES

CLIENT

CONSULTANT

GOLDER

YYYY-MM-DD	03/12/2018
DESIGNED	EAA
PREPARED	EAA
REVIEWED	BH
APPROVED	BH

NOTE(S)
COORDINATE SYSTEM: GDA 1994 MGA ZONE 56

REFERENCE(S)
AERIAL IMAGE COPYRIGHT OF NEARMAPS. IMAGE DATED 11 SEPTEMBER 2018

PROJECT
1791865

TITLE
SITE LAYOUT AND LOCATION

PROJECT NO.	CONTROL	REV.	FIGURE
1791865		0	001

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

25mm

0

333411



KEY MAP

LEGEND

- Soil
- Soil and Groundwater
- Soil and Soil Vapour
- Existing Groundwater Well

0 80

1:1,000 METRES

NOTE(S)
1. COORDINATE SYSTEM: GDA 1994 MGA ZONE 56

REFERENCE(S)
1. AERIAL PHOTOGRAPH (C) NEARMAP.

CLIENT
TRANSPORT FOR NSW - TSE

PROJECT
SYDNEY METRO - WATERLOO STATION

TITLE
SITE INVESTIGATION SAMPLING LOCATIONS

CONSULTANT
GOLDER

DD-MM-YYYY	03-12-2018
DESIGNED	EAA
PREPARED	EAA
REVIEWED	-
APPROVED	-

PROJECT NO.	CONTROL	REV.	FIGURE
1791865	-	A	002

© THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3
25mm
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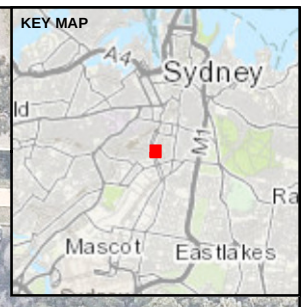
Exceedance Criteria Key
ESL / EIL
ML
HSL / HIL
ML / ESL / EIL

KEY MAP



SRT-BH423	Depth (m)	Conc. (mg/kg)
Zinc	0.5	500
BaP	0.5	2

SRT-BH425	Depth (m)	Conc. (mg/kg)
Copper	0.15	128
Zinc	0.15	566
BaP	0.15	19
TRH>C10-C16 (F2)	0.4	2140
TRH>C16-C34 (F3)	0.4	23600
TRH>C34-C40 (F4)	0.4	4620
Copper	0.4	85
BaP	0.4	320
BaP TEQ	0.4	472
PAH (sum)	0.4	4920

SRT-BH420	Depth (m)	Conc. (mg/kg)
Asbestos	0.5	Detected
Zinc	0.5	804
Zinc	1.0	481

SRT-BH419	Depth (m)	Conc. (mg/kg)
BaP	1.05	2.5

SRT-BH416	Depth (m)	Conc. (mg/kg)
Zinc	0.25	2100

SRT-BH414	Depth (m)	Conc. (mg/kg)
BaP	0.4	5.9

SRT-BH426
SRT-BH424
SRT-BH422
SRT-BH421
SRT-BH418
SRT-BH419A (failed attempt)
SRT-BH417
SRT-BH415
SRT-BH13A
SRT-GMW1A
SRT-BH412
SRT-GMW2A
SRT-BH411
SRT-BH410
SRT-BH408
SRT-BH409

6247611

LEGEND

- Soil
- Soil and Groundwater
- Soil and Soil Vapour

0 30 60

1:750 METRES

NOTE(S)

REFERENCE(S)
AERIAL PHOTO (C) NEARMAP.

CLIENT
SYDNEY METRO

PROJECT
SYDNEY METRO - WATERLOO STATION

CONSULTANT
GOLDER
Douglas Partners
Geotechnics / Environment / Groundwater

YYYY-MM-DD	2019-03-01
DESIGNED	EAA
PREPARED	EAA
REVIEWED	BH
APPROVED	-

TITLE
SOIL EXCEEDANCES – COMMERCIAL / INDUSTRIAL CRITERIA

PROJECT NO.	CONTROL	REV.	FIGURE
1791865	008-R	A	3

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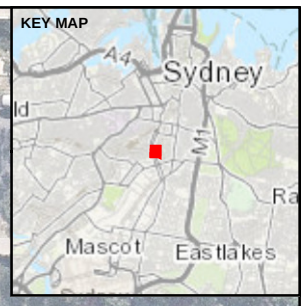
333461

Key
95% Species Protection - ANZG
ADWG - health
ADWG - recreation
Multiple
* NEMP

KEY MAP



SRT-BH426	Conc.
PFHxS & PFOS (sum) (µg/L)	0.42
PFOS (µg/L)	0.4*
Copper	2
Zinc	73

SRT-BH420	Conc.
Copper	3
Zinc	16

SRT-BH419	Conc.
PFOS (µg/L)	0.02*
Zinc	48

SRT-GMW1A	Conc.
PFHxS & PFOS (sum) (µg/L)	0.48
PFOS (µg/L)	0.41*
Copper	4
Lead	16
Zinc	555

SRT-GMW2A (SRT-QCA200 & SRT-QCB200)	Conc.
PFHxS & PFOS (sum) (µg/L)	0.12
PFOS (µg/L)	0.09*
Zinc	60

6247598

LEGEND

- Soil
- Soil and Groundwater
- Soil and Soil Vapour

* NEPM ecological criterion

NOTE(S)

0 30 60

1:750 METRES

REFERENCE(S)
AERIAL PHOTO (C) NEARMAP.

CLIENT
SYDNEY METRO

PROJECT
SYDNEY METRO - WATERLOO STATION

CONSULTANT
GOLDER
Douglas Partners
Geotechnics | Environment | Groundwater

YYYY-MM-DD	2019-02-28
DESIGNED	EAA
PREPARED	EAA
REVIEWED	-
APPROVED	-

TITLE
GROUNDWATER EXCEEDANCES

PROJECT NO.	CONTROL	REV.	FIGURE
1791865	008-R	A	4

Document Path: V:\TfNSW\1791865_SMW\GIS\Project\008-R\1791865-008-R-F0004_GroundwaterExceedances.mxd

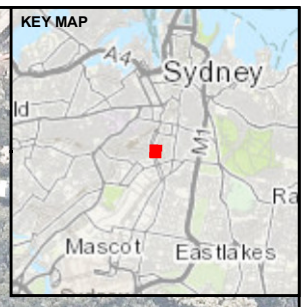
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ISO A3

25mm

0

Exceedance Criteria Key
HSL / HIL - Residential B
HSL / HIL - Commercial/Industrial

KEY MAP



SRT-BH425
SRT-BH426
SRT-BH424
SRT-BH423
SRT-BH422
SRT-BH421
SRT-BH420
SRT-BH419
SRT-BH418
SRT-BH419A
SRT-BH417
SRT-BH415
SRT-BH413A
SRT-GMW1A
SRT-BH414
SRT-BH412
SRT-GMW2A
SRT-BH411
SRT-BH410
SRT-BH408
SRT-BH409

SRT_BH416	Conc. (mg/m3)
Tetrachloroethene	8.4

SRT_BH415 (QC100 & QC200)	Conc. (mg/m3)
Tetrachloroethene	2.52

LEGEND

- Soil
- Soil and Groundwater
- Soil and Soil Vapour

NOTE(S)

0 30 60
1:750 METRES

REFERENCE(S)
AERIAL PHOTO (C) NEARMAP.

CLIENT
SYDNEY METRO

PROJECT
SYDNEY METRO - WATERLOO STATION

CONSULTANT
GOLDER
Douglas Partners
Geotechnics | Environment | Groundwater

YYYY-MM-DD	2019-02-28
DESIGNED	EAA
PREPARED	EAA
REVIEWED	-
APPROVED	-

TITLE
SOIL VAPOUR EXCEEDANCES - COMMERCIAL / INDUSTRIAL & RESIDENTIAL B CRITERIA

PROJECT NO.	CONTROL	REV.	FIGURE
1791865	008-R	A	5

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

SRT-BH425	Depth	Conc.
TRH>C16-C34 (F3)	0.15	1070
Copper	0.15	128
Zinc	0.15	566
BaP	0.15	19
BaP TEQ	0.15	27.8
TRH>C10-C16	0.4	2140
TRH>C10-C16 (F2)	0.4	2090
TRH>C16-C34 (F3)	0.4	23600
TRH>C34-C40 (F4)	0.4	4620
Benzene	0.4	1.8
Naphthalene	0.4	49-111
Copper	0.4	85
BaP	0.4	320
BaP TEQ	0.4	472
Total PAHs	0.4	4920
BaP	1.0	0.9

SRT-BH426	Depth	Conc. (mg/kg)
BaP	1.0	0.9

SRT-BH423	Depth	Conc. (mg/kg)
Zinc	0.5	500
BaP	0.5	2

SRT-BH422	Depth	Conc. (mg/kg)
BaP	0.5	1.4
BaP	1.5	0.9

SRT-BH420	Depth	Conc. (mg/kg)
Asbestos	0.5	Detected
Copper	0.5	76
Zinc	0.5	804
BaP	0.5	0.8
Copper	1.0	78
Zinc	1.0	481

SRT-BH421 (QCA102 & QCB102)	Depth	Conc. (mg/kg)
BaP	0.5	1.0

SRT-BH419	Depth	Conc. (mg/kg)
BaP	0.5	2.5

SRT-BH418	Depth	Conc. (mg/kg)
Copper	0.2	63

SRT-BH416	Depth	Conc. (mg/kg)
Zinc	0.25	2100
BaP	0.5	0.8

SRT-BH413A	Depth	Conc. (mg/kg)
Copper	0.5	72

SRT-BH414	Depth	Conc. (mg/kg)
TRH>C16-C34 (F3)	0.4	430
BaP	0.4	5.9
BaP TEQ	0.4	8.8

SRT-BH412	Depth	Conc. (mg/kg)
BaP	0.5	1.2

Key
ESL / EIL
ML
HSL / HIL
Multiple

KEY MAP

SRT-BH424
SRT-BH419A
SRT-BH417
SRT-BH415
SRT-GMW1A
SRT-GMW2A
SRT-BH411
SRT-BH410
SRT-BH408
SRT-BH409

LEGEND

- Soil
- Soil and Groundwater
- Soil and Soil Vapour

0 30 60

1:750 METRES

NOTE(S)

REFERENCE(S)
AERIAL PHOTO (C) NEARMAP.

CLIENT
SYDNEY METRO

PROJECT
SYDNEY METRO - WATERLOO STATION

CONSULTANT
GOLDER
Douglas Partners
Geotechnics | Environment | Groundwater

YYYY-MM-DD	2019-02-28
DESIGNED	EAA
PREPARED	EAA
REVIEWED	BH
APPROVED	-

TITLE
SOIL EXCEEDANCES – RESIDENTIAL B CRITERIA

PROJECT NO.	CONTROL	REV.	FIGURE
1791865	008-R	A	6

Document Path: V:\TfNSW\1791865_SMWGIS\Project\008-R\1791865-008-R-F0006_SoilResB.mxd

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

25mm

0

APPENDIX A

Groundwater Bore Search Information

WaterNSW
Work Summary

GW106192

Licence: | **Licence Status:**

Authorised Purpose(s):
Intended Purpose(s): DOMESTIC

Work Type: Spear
Work Status: Supply Obtained
Construct.Method: Jetted - Water
Owner Type: Private

Commenced Date:
Completion Date: 10/12/2004
Final Depth: 6.00 m
Drilled Depth: 6.00 m

Contractor Name: B & B DRILLING INC
Driller: Michael Gerard Barrett
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m): 4.000
Salinity Description: Good
Yield (L/s): 0.500

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBERLAND	ALEXANDRIA	8//248162
Licensed:			

Region: 10 - Sydney South Coast
River Basin: 213 - SYDNEY COAST - GEORGES RIVER
Area/District:
CMA Map: 9130-3S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: (Unknown)
Northing: 6247611.000
Easting: 333418.000
Latitude: 33°53'55.5"S
Longitude: 151°11'54.2"E

GS Map: -
MGA Zone: 56
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	6.00	90			Jetted - Water
1	1	Casing	P.V.C.	0.00	5.40	32	26		Seated on Bottom, Glued
1	1	Opening	Screen - Wire Wound	5.40	6.00	50		0	Stainless Steel, Screwed, A: 0.15mm

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
4.00	6.00	2.00	Unknown	4.00		0.50		00:05:00	

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.30	0.30	topsoil	Topsoil	
0.30	2.20	1.90	sand, yellow	Sand	
2.20	2.30	0.10	rock, coffee	Rock	

2.30	4.50	2.20	sand, brown	Sand	
4.50	6.00	1.50	sand, grey	Sand	

Remarks

07/12/2009: updated from original form A

***** End of GW106192 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW111958

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Spear
Work Status: Equipped
Construct.Method: Auger - Solid Flight
Owner Type: Private

Commenced Date:
Completion Date: 27/04/2012
Final Depth: 6.00 m
Drilled Depth: 6.00 m

Contractor Name: SGA Environmental
Driller: Dahmon Sorongan
Assistant Driller: James King

Property:
GWMA:
GW Zone:
Standing Water Level (m): 3.490
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBERLAND	ALEXANDRIA	A//388055
Licensed:			

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6247347.000
Easting: 333507.000
Latitude: 33°54'04.1"S
Longitude: 151°11'57.5"E

GS Map: -
MGA Zone: 56
Coordinate Source: Unknown

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	6.00	88			Auger - Solid Flight
1		Annulus	Crushed Aggregate	2.00	3.50				
1	1	Casing	Pvc Class 18	0.00	2.50	50	44		Seated on Bottom
1	1	Opening	Slots - Horizontal	2.50	4.50	50		0	Casing - Machine Slotted, PVC Class 18, Screwed, SL: 40.0mm, A: 5.00mm

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
3.49	4.50	1.01	Unknown	3.49					

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.32	0.32	CONCRETE	Fill	
0.32	1.40	1.08	FILL, LOOSE,DARK GREY/BLACK CLAYEY SAND AND SANDSTONE	Fill	
1.40	6.00	4.60	SAND, LOOSE WHITE FINE GRAINED	Sand	

Remarks

17/07/2014: Nat Carling, 17-July-2014; Updated work type, added status, fixed driller's log error.

***** End of GW111958 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW113035

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 17/11/2008
Final Depth: 5.00 m
Drilled Depth: 5.00 m

Contractor Name: (None)
Driller: Unkown Unknown
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m):
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBERLAND	ALEXANDRIA	1//542373
Licensed:			

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6247205.000
Easting: 333571.000
Latitude: 33°54'08.7"S
Longitude: 151°11'59.9"E

GS Map: -
MGA Zone: 56
Coordinate Source: Unknown

Remarks

23/07/2014: Nat Carling, 22-July-2014; Added status, drill method & depth, updated work type.

***** End of GW113035 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW113036

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 17/11/2008
Final Depth: 4.00 m
Drilled Depth: 4.00 m

Contractor Name: (None)
Driller: Unkown Unknown
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m):
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBERLAND	ALEXANDRIA	1 542373
Licensed:			

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6247220.000
Easting: 333566.000
Latitude: 33°54'08.2"S
Longitude: 151°11'59.7"E

GS Map: -
MGA Zone: 56
Coordinate Source: Unknown

Remarks

23/07/2014: Nat Carling, 22-July-2014; Added status, drill method & depth, updated work type.

***** End of GW113036 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW113037

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 17/11/2008
Final Depth: 5.00 m
Drilled Depth: 5.00 m

Contractor Name: (None)
Driller: Unkown Unknown
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m):
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBERLAND	ALEXANDRIA	1//542373
Licensed:			

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6247245.000
Easting: 333582.000
Latitude: 33°54'07.4"S
Longitude: 151°12'00.3"E

GS Map: -
MGA Zone: 56
Coordinate Source: Unknown

Remarks

23/07/2014: Nat Carling, 22-July-2014; Added status, drill method & depth, updated work type.

***** End of GW113037 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW113038

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 17/02/2009
Final Depth: 5.00 m
Drilled Depth: 5.00 m

Contractor Name: (None)
Driller: Unkown Unknown
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m):
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBERLAND	ALEXANDRIA	1//542373
Licensed:			

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6247239.000
Easting: 333577.000
Latitude: 33°54'07.6"S
Longitude: 151°12'00.1"E

GS Map: -
MGA Zone: 56
Coordinate Source: Unknown

Remarks

23/07/2014: Nat Carling, 22-July-2014; Added status, drill method & depth, updated work type.

***** End of GW113038 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW113039

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 17/10/2013
Final Depth: 5.00 m
Drilled Depth: 5.00 m

Contractor Name: (None)
Driller: Unkown Unknown
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m):
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBERLAND	ALEXANDRIA	1//542373
Licensed:			

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6247245.000
Easting: 333561.000
Latitude: 33°54'07.4"S
Longitude: 151°11'59.5"E

GS Map: -
MGA Zone: 56
Coordinate Source: Unknown

Remarks

23/07/2014: Nat Carling, 22-July-2014; Added status, drill method & depth, updated work type.

***** End of GW113039 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW114895

Licence:
Licence Status:
Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger - Solid Flight
Owner Type: Private

Commenced Date:
Completion Date: 08/02/2013
Final Depth: 6.00 m
Drilled Depth: 6.00 m

Contractor Name: Tightsight Investigations
Driller: Ian David Drever
Assistant Driller: Ben McGiffin

Property:
GWMA:
GW Zone:
Standing Water Level (m): 4.200
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBERLAND	ALEXANDRIA	1//88622
Licensed:			

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6247498.000
Easting: 333583.000
Latitude: 33°53'59.2"S
Longitude: 151°12'00.6"E

GS Map: -
MGA Zone: 56
Coordinate Source: Unidentified

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	6.00	95			Auger - Solid Flight
1		Annulus	Cement Grout	0.00	0.15	95	60		
1		Annulus	Bentonite	0.15	2.70	95	60		PL:Poured/Shovelled
1		Annulus	Waterworn/Rounded	2.70	5.80	95	60		Ungraded, PL:Poured/Shovelled
1	1	Casing	Pvc Class 12	0.00	2.80	60	54		Seated on Bottom, Screwed
1	1	Opening	Slots	2.80	5.80	60		0	Casing - Machine Slotted, PVC Class 12, Screwed

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
4.20	6.00	1.80	Unknown	4.20					

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.15	0.15	CONCRETE	Fill	

0.15	1.20	1.05	FILL; Sandy Clay/clay sand with gravels, brown/black, medium grained sand, gravel (5-50mm, 10-20%), medium dense to dens	Fill	
1.20	1.80	0.60	Sand, yellow/white, medium grained, loose	Sand	
1.80	2.40	0.60	Sand, yellow, medium grained, medium dense	Sand	
2.40	2.90	0.50	Sand; light brown, medium grained, medium dense	Sand	
2.90	6.00	3.10	Sand; grey whtie, becoming saturated at 4.5m, medium dense - dense	Sand	

Remarks

08/02/2013: Form A Remarks:
Coordinates provided by LAS.
L. Franchi 9/6/2015
10/08/2015: Nat Carling, 10-Aug-2015; Updated work type & coordinate source. Fixed rock type errors.
15/09/2016: Nat Carling, 15-Sept-2016; Updated coordinates, drillers log & annulus details, as provided on original Form-A.

***** End of GW114895 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

APPENDIX B1

EPA Searches

CLM ACT RECORD OF NOTICES SEARCH RESULTS

Search results

Your search for: Suburb: WATERLOO

Matched 11 notices relating to 1 site.

Search Again Refine Search

Suburb	Address	Site Name	Notices related to this site
WATERLOO	887-893 Bourke STREET	Lawrence Dry Cleaners	8 current and 3 former

Page 1 of 1

20 November 2018

Search results

Your search for: Suburb: ALEXANDRIA

Matched 6 notices relating to 4 sites.

Search Again Refine Search

Suburb	Address	Site Name	Notices related to this site
ALEXANDRIA	Off Huntley STREET	Alexandra Canal Sediments	2 current
ALEXANDRIA	10-24 Ralph STREET	Australia Post	1 current
ALEXANDRIA	49-59 O'Riordan STREET	Former Cadbury Schweppes	1 former
ALEXANDRIA	10-20 Botany ROAD	Formerly Gas N Go Alexandria (fully redeveloped into residential apartment as of September 2016)	2 current

Page 1 of 1

20 November 2018

Search results

Your search for: Suburb: EVELEIGH

Matched 2 notices relating to 1 site.

Search Again Refine Search

Suburb	Address	Site Name	Notices related to this site
EVELEIGH	Burren STREET	Macdonaldtown Triangle	2 former

Page 1 of 1

20 November 2018

Search results

Your search for: Suburb: REDFERN

did not find any records in our database.

SEARCH RESULTS FOR NOTIFICATIONS UNDER SECTION 60 OF THE CLM ACT

List current as of 5 October 2018

Suburb	Site Name	Site Address	Contamination Activity Type	Management Class
WATERLOO	22-24 Archibald Avenue	22-24 Archibald AVENUE	Other Petroleum	Under assessment
WATERLOO	Diversity Waterloo	1-13 Archibald AVENUE	Other Industry	Under assessment
WATERLOO	Iconic (Former Chubb Factory) Waterloo	830-838 Elizabeth STREET	Other Industry	Regulation under CLM Act not required
WATERLOO	Lawrence Dry Cleaners	887-893 Bourke STREET	Unclassified	Contamination currently regulated under CLM Act
WATERLOO	Proposed Construction Site	2 John STREET	Other Industry	Regulation under CLM Act not required
WATERLOO	Shell Coles Express Service Station	867-877 South Dowling STREET	Service Station	Regulation under CLM Act not required
WATERLOO	Waverley Woollahra Process Plant	355 Botany ROAD	Other Industry	Regulation under CLM Act not required

Suburb	Site Name	Site Address	Contamination Activity Type	Management Class
ALEXANDRIA	Alexandra Canal Sediments	Off Huntley STREET	Unclassified	Contamination currently regulated under CLM Act
ALEXANDRIA	Alexandria Gardens	146-156 Wyndham St & 146-156 Botany Rd	Unclassified	Regulation under CLM Act not required
ALEXANDRIA	Alexandria GoGas	562 Botany ROAD	Service Station	Regulation under CLM Act not required
ALEXANDRIA	Australia Post	10-24 Ralph STREET	Other Industry	Contamination being managed via the planning process (EP&A
ALEXANDRIA	Australian Refined Alloys	202-212 Euston ROAD	Metal Industry	Regulation under CLM Act not required
ALEXANDRIA	Caltex Alexandria Service Station	133 Wyndham St, cnr McEvoy STREET	Service Station	Regulation under CLM Act not required
ALEXANDRIA	Former Cadbury Schweppes	49-59 O'Riordan STREET	Other Industry	Contamination formerly regulated under the CLM Act
ALEXANDRIA	Former Industrial Site (now Value Suites)	16 O'Riordan STREET	Other Industry	Regulation under CLM Act not required
ALEXANDRIA	Former Mobil Service Station	20 O'Riordan STREET	Service Station	Regulation under CLM Act not required
ALEXANDRIA	Formerly Gas N Go Alexandria (fully redeveloped into	10-20 Botany ROAD	Service Station	Under assessment
ALEXANDRIA	Mascot Developments	494-504 Gardeners ROAD	Other Industry	Regulation under CLM Act not required
ALEXANDRIA	Perry Park	1B Maddox STREET	Landfill	Regulation under CLM Act not required
ALEXANDRIA	Sydney Park	Sydney Park, Alexandria ROAD	Landfill	Under assessment

Suburb	Site Name	Site Address	Contamination Activity Type	Management Class
EVELEIGH	Australian Technology Park	Henderson ROAD	Other Industry	Regulation under CLM Act not required
EVELEIGH	Macdonaldtown Triangle	Burren STREET	Gasworks	Contamination being managed via the planning process (EP&A

Suburb	Site Name	Site Address	Contamination Activity Type	Management Class
REDFERN	BP Service Station	116 Regent STREET	Service Station	Regulation under CLM Act not required
REDFERN	BP-branded Jasbe Surry Hills	411 Cleveland STREET	Service Station	Regulation under CLM Act not required
REDFERN	Former Printing Works	101a Marriott	Other Industry	Regulation under CLM Act not required

POEO ACT ENVIRONMENT PROTECTION LICENCE SEARCH RESULTS

Search results

Your search for: **POEO Licences** with the following criteria

Suburb - waterloo

returned 4 results

Export to excel 1 of 1 Pages Search Again

Number	Name	Location	Type	Status	Issued date
11337	DAVID GRAPHICS PTY LIMITED	165 Phillip Street, WATERLOO, NSW 2017	POEO licence	Surrendered	31 Jan 2001
2331	EMWEST PRODUCTS PTY LIMITED	JOYNTON AVE, WATERLOO, NSW 2017	POEO licence	Surrendered	24 Mar 2000
6806	HEIDELBERG GRAPHIC EQUIPMENT LIMITED	50 O'DEA AVENUE, WATERLOO, NSW 2017	POEO licence	No longer in force	01 May 2000
500	LAWRENCE DRY CLEANERS PTY LTD	887 BOURKE STREET, WATERLOO, NSW 2017	POEO licence	No longer in force	17 Apr 2001

20 November 2018

Search results

Your search for: **POEO Licences** with the following criteria

Suburb - redfern

returned 1 results

Export to excel 1 of 1 Pages Search Again

Number	Name	Location	Type	Status	Issued date
6568	SYDNEY SOUTH WEST AREA HEALTH SERVICE	150 PITT ST, REDFERN, NSW 2016	POEO licence	Surrendered	04 Aug 2000

20 November 2018

Search results

Your search for: **POEO Licences** with the following criteria

Suburb - eveleigh

returned 2 results

Export to excel 1 of 1 Pages Search Again

Number	Name	Location	Type	Status	Issued date
10046	JOHNSON & JOHNSON RESEARCH PTY LTD	1 CENTRAL AVENUE, EVELEIGH, NSW 1430	POEO licence	Surrendered	25 Nov 1999
12389	RAIL CORPORATION NEW SOUTH WALES	Henderson Road (off), EVELEIGH, NSW 2015	POEO licence	No longer in force	22 Dec 2005

20 November 2018

Search results

Your search for: **POEO Licences** with the following criteria

Suburb - Alexandria
returned 20 results

Export to excel 1 of 1 Pages Search Again

Number	Name	Location	Type	Status	Issued date
11121	ANGLO METALS PTY LTD	373-377 Belmont Street, ALEXANDRIA, NSW 2015	POEO licence	Surrendered	28 Jul 2000
6086	AUSTRALIAN METAL CO PTY LTD	15 BOURKE ROAD, ALEXANDRIA, NSW 2015	POEO licence	No longer in force	07 Feb 2000
1108	AUSTRALIAN REFINED ALLOYS PTY LTD	202-212 EUSTON ROAD, ALEXANDRIA, NSW 2015	POEO licence	Issued	26 Jun 2000
520	BIRD BROS PTY LTD	69-73 O'RIORDAN STREET, ALEXANDRIA, NSW 2015	POEO licence	Surrendered	19 Apr 2000
4994	CARDINAL GROUP PTY LTD	3-7 O'RIORDAN ST, ALEXANDRIA, NSW 2015	POEO licence	Revoked	02 May 2000
3428	CONCRITE PTY LTD	25 MANDIBLE STREET, ALEXANDRIA, NSW 2015	POEO licence	No longer in force	14 Apr 2000
838	CSR VIRIDIAN LIMITED	8-40 EUSTON ROAD, ALEXANDRIA, NSW 2015	POEO licence	Surrendered	20 Jun 2001
4679	DIAL A DUMP INDUSTRIES PTY. LTD.	76-82 BURROWS ROAD, ALEXANDRIA, NSW 2015	POEO licence	Issued	16 Oct 2000
6522	DIAMOND PRESS AUSTRALIA PTY LIMITED	118-124 BOURKE ROAD, ALEXANDRIA, NSW 2015	POEO licence	Revoked	27 Mar 2000
6941	FUJI XEROX AUSTRALIA PTY. LIMITED	546 GARDENERS ROAD, ALEXANDRIA, NSW 2015	POEO licence	Surrendered	26 Jun 2000
3140	FULTON HOGAN INDUSTRIES PTY LTD	40-42 BURROWS ROAD, ALEXANDRIA, NSW 2015	POEO licence	No longer in force	22 Sep 2000
4532	GOOD RIVER PROPERTIES PTY LTD	34 BURROWS ROAD, ALEXANDRIA, NSW 1435	POEO licence	Surrendered	18 Apr 2000
5665	HANNANPRINT NSW PTY LIMITED	55 DOODY STREET, ALEXANDRIA, NSW 2015	POEO licence	No longer in force	26 Jun 2000
979	HOLCIM (AUSTRALIA) PTY LTD	122-132 EUSTON ROAD, ALEXANDRIA, NSW 2015	POEO licence	No longer in force	14 Mar 2000
6801	LEGRAND AUSTRALIA PTY LTD	298 BOTANY ROAD, ALEXANDRIA, NSW 2015	POEO licence	Surrendered	23 Mar 2000
1107	METROMIX PTY. LIMITED	131 WYNDHAM STREET, ALEXANDRIA, NSW 2015	POEO licence	No longer in force	27 Jun 2000
1005	METROMIX PTY. LIMITED	169 EUSTON ROAD, ALEXANDRIA, NSW 2015	POEO licence	No longer in force	06 Sep 2000
155	MONROE SPRINGS (AUSTRALIA) PTY LTD	52 O'RIORDAN STREET, ALEXANDRIA, NSW 2015	POEO licence	Issued	29 Mar 2000
6787	MORGANITE AUSTRALIA PTY LTD	65 BOURKE ROAD, ALEXANDRIA, NSW 2015	POEO licence	Surrendered	28 Aug 2000
6162	SCHERING PTY LTD	27-31 DOODY STREET, ALEXANDRIA, NSW 2015	POEO licence	Surrendered	17 Jan 2000

20 November 2018

POEO ACT ENVIRONMENT PROTECTION LICENCE PENALTY NOTICES SEARCH RESULTS

Search results

Your search for: **Notices** with the following criteria

Notice type - Penalty Notice
Suburb - Waterloo
returned 0 result

Search Again

Search results

Your search for: **Notices** with the following criteria

Notice type - Penalty Notice
Suburb - Alexandria
returned 1 results

Export to excel 1 of 1 Pages Search Again

Number	Name	Location	Type	Status	Issued date
3085767053	MONROE SPRINGS (AUSTRALIA) PTY LTD	52 O'RIORDAN STREET, ALEXANDRIA, NSW 2015	Penalty Notice	Issued	05 Dec 2012

20 November 2018

Search results

Your search for: **Notices** with the following criteria

Notice type - Penalty Notice
Suburb - Redfern
returned 0 result

Search Again

Search results

Your search for: **Notices** with the following criteria

Notice type - Penalty Notice
Suburb - Eveleigh
returned 0 result

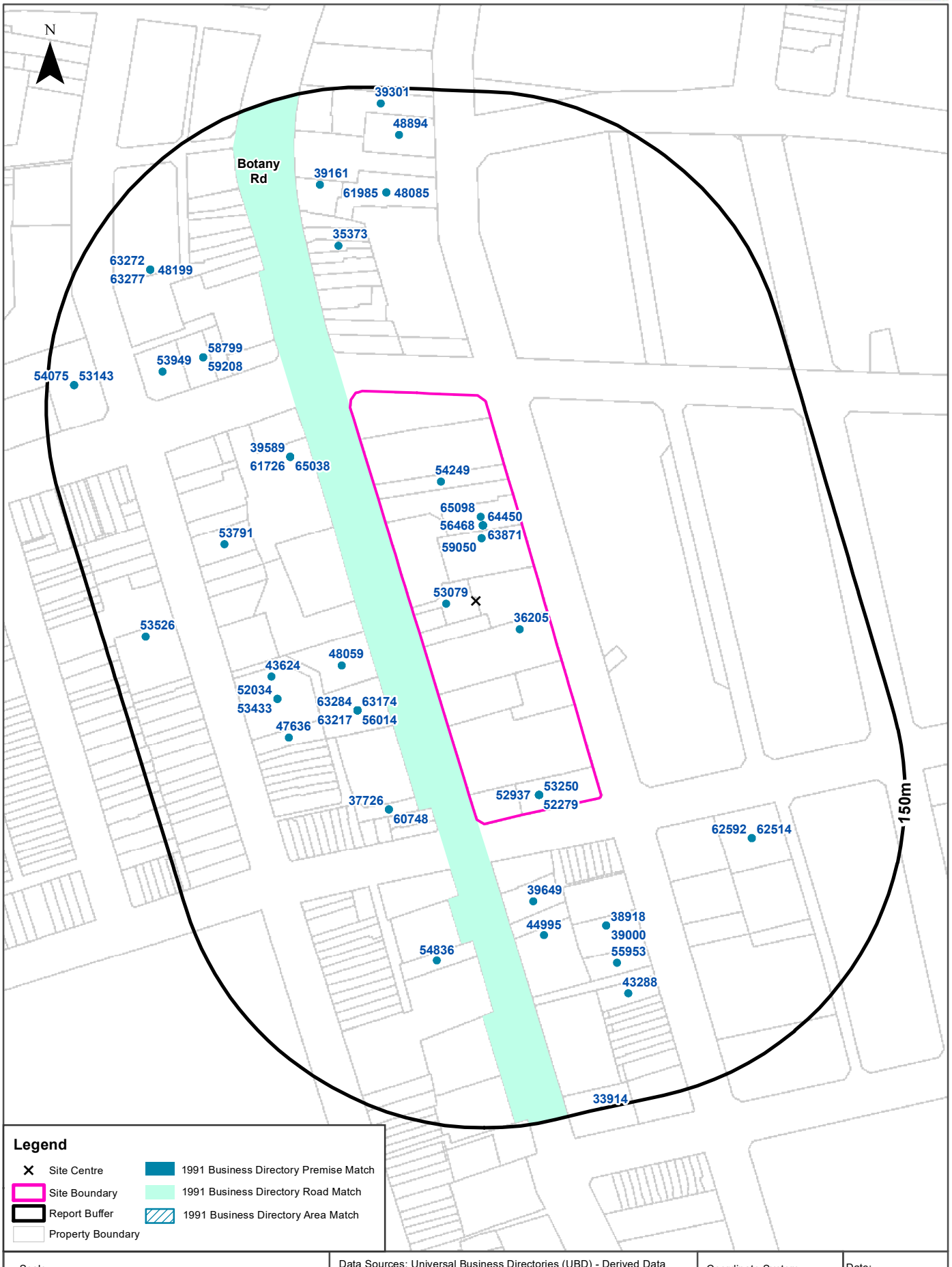
Search Again

APPENDIX B2

Excerpts from Environmental Assessments

1991 Historical Business Directory Records

Waterloo Metro Site, Waterloo, NSW 2017



Data Sources: Universal Business Directories (UBD) - Derived Data Licensed from Hardie Grant.
Property Boundaries & Topographic Data: © Land and Property Information (a division of the Department of Finance and Services) 2016

Coordinate System:
GDA 1994 MGA Zone 56

Date:
18 October 2016

Historical Business Directories

Waterloo Metro Site, Waterloo, NSW 2017

1991 Business to Business Directory Records

Records from the 1991 UBD Business to Business Directory within 150m of the site:

Business Activity	Organisation	Address	Ref No.	Location Confidence	Distance	Direction
Printers Lithographic (Offset)	Bragg Edgar & Sons Pty. Ltd	130 Cope St Waterloo 2017	59050	Premise Match	0m	Onsite
Bookbinders &/or Paper Rulers	Bragg, Edgar & Sons Ply. Liii.,	130 Cope St. Waterloo. 2017.	36411	Premise Match	0m	Onsite
Motor Engineers	Chris & Con Motor Repairs	85 Botany Rd Waterloo 2017	53079	Premise Match	0m	Onsite
Typesetters	Adcraft Graphic Design Pty Ltd	126 Cope St Waterloo 2017	65098	Premise Match	0m	Onsite
Boat, Launch &/or Yacht Equipment	Basham, R. W. Pty. Ltd.	146 Cope St., Waterloo. 2017	36205	Premise Match	0m	Onsite
Motor Panel Beaters &/or Spray Painters	Car Builders Pty Ltd	65 Botany Rd Waterloo 2017	54249	Premise Match	0m	Onsite
Toilet Paper Mfrs &/or Dists	Daines Harry Pty Ltd	128 Cope St Walarloo 2017	64450	Premise Match	0m	Onsite
Store &/or Packing Room Equipment Mfrs &/or Dists	Daines Harry Pty Ltd	128 Cope St Walarloo 2017	63620	Premise Match	0m	Onsite
Packaging Materials Mfrs &/or Dists	Daines Harry Pty. Ltd	128 Cope St Waterloo 2017	56359	Premise Match	0m	Onsite
Tape Adhesive Mfrs &/or Imps &/or Dists	Daines, Harry Pty Ltd	128 Cope St Walarloo 2017	63871	Premise Match	0m	Onsite
Electric Tools Mfrs &/or Dists	Daines, Harry Pty. Ltd.	128 Copa St., Waterloo. 2017	42342	Premise Match	0m	Onsite
Paper Products Disposable Mfrs &/or Dists	Daines, Harry Pty. Ltd.	128 Cope St Waterloo 2017	56788	Premise Match	0m	Onsite
Abrasive Merchants	Dalnes, harry Pty. Ltd.	128 Cope St., Waterloo 2017	33306	Premise Match	0m	Onsite
Packaging Services	Harry Daines Pty Ltd	128 Cope St Waterloo 2017	56468	Premise Match	0m	Onsite
Motor Brake Specialists	Joseph Bros Pty Ltd	129 Wellington St Waterloo 2017	52279	Premise Match	0m	Onsite
Motor Clutch Specialists	Joseph Bros Pty Ltd	129 Wellington St Waterloo 2017	52870	Premise Match	0m	Onsite
Motor Engine Reconditioners	Joseph Bros Pty Ltd	129 Wellington St Waterloo 2017	52937	Premise Match	0m	Onsite
Motor Brake &/or Spare Parts Mfrs &/or Imps &/or W/salers	Joseph Bros Pty Ltd	129 Wellington St Waterloo 2017	52173	Premise Match	0m	Onsite
Motor Brake Lining Mfrs &/or Dists	Joseph Bros Pty Ltd	129 Wellington St., Waterloo 2017	52195	Premise Match	0m	Onsite
Motor Engineers	Joseph Bros. Pty Ltd	129 Wellington St, Waterloo 2017	53250	Premise Match	0m	Onsite
Guillotione Blade &/or Shear Mfrs &/or Dists	Stationery Wholesalers (Trading Stationery Wholesalers)	Botany Rd Alexandria 2015	48062	Road Match	0m	South
Screen Printers	Mambo Graphics Pty Ltd	62 Botany Rd Alexandria 2015	61726	Premise Match	33m	North West
TShirt Printers &/or Suppliers	Mambo Graphics Pty Ltd	62 Botany Rd Alexandria 2015	65038	Premise Match	33m	North West
Clothing Mfrs &/or W/salers Sportswear	Mambo Graphics Pty Ltd	62 Botany Rd, Alexandria 2015	39589	Premise Match	33m	North West
Business Agents &/or Brokers	Silver & Co	128 Botany Rd, Alexandria 2015	37726	Premise Match	38m	South West
Real Estate Agents	Silver & Co	128 Botany Rd., Alexandria. 2015	60748	Premise Match	38m	South West
Stapling Tacking &/or Wire Stitching Machine Mfrs &/or Dists	Stationery Wholesalers	108 Botany Rd Alexandria 2015	63157	Premise Match	38m	South West
Stationers Commercial	Stationery Wholesalers	108 Botany Rd Alexandria 2015	63174	Premise Match	38m	South West
Stationers Manufacturing	Stationery Wholesalers	108 Botany Rd Alexandria 2015	63217	Premise Match	38m	South West

Business Activity	Organisation	Address	Ref No.	Location Confidence	Distance	Direction
Paper Shredders & Guillotines Mfrs &/or Imps &/or Dists	Stationery Wholesalers	108 Botany Rd Alexandria 2015	56816	Premise Match	38m	South West
StationersWholesale	Stationery Wholesalers	108 Botany Rd Alexandria 2015	63284	Premise Match	38m	South West
Furniture Mfrs &/or W/salers Office	Stationery Wholesalers	108 Botany Rd Alexandria 2015	47256	Premise Match	38m	South West
Shop &/or Office Fittings Mfrs &/or Dists	Stationery Wholesalers	108 Botany Rs Alexandria 2015	62424	Premise Match	38m	South West
Office Equipment &/or Supplies Mfrs &/or Imps &/or W/salers	Stationery Wholesalers	108Botany Rd Alexandria 2015	56014	Premise Match	38m	South West
Guillotione Blade &/or Shear Mfrs &/or Dists	Dudley Trading Company	102 Botany Rd Alexandria 2015	48059	Premise Match	39m	South West
Clothing Presser For Trade	Danny Pressing Service	125 Botany Rd, Waterloo. 2017	39649	Premise Match	41m	South
Engineers Supplies	Winnick Machines Pty Ltd	133 Botany Rd Waterloo 2017	44995	Premise Match	58m	South
Chemists Industrial	McLean, A. R. & Co Pty. Ltd.	180 Cope St. Waterloo 2017	39000	Premise Match	60m	South
Chemical Mfrs &/or Imps &/or Dists	McLean, A. R. & Co. Pty. Ltd	180 Cope St., Waterloo. 2017.	38918	Premise Match	60m	South
Motor Panel Beaters &/or Spray Painters	Summer Motors	144 Botany Rd Alexandria 2015	54836	Premise Match	69m	South
Bakers	Vicki's Hot Bread	33 Botany Rd, Alexandria 2015	35373	Premise Match	71m	North
Printers General	Lindwall & Ward Pty. Ltd.	5 Henderson Rd Alexandria 2015	58799	Premise Match	74m	North West
Printers Lithographic (Offset)	Lindwall & Ward Pty. Ltd.,	5 Henderson Rd., Alexandria. 2015.	59208	Premise Match	74m	North West
Engineers Electrical	Hodgson L Lee	84 Wyndham St Alexandria 2015	43624	Premise Match	74m	West
Signs General	Han Ho Signs & Interiors	116 Wellington St Waterloo 2017	62514	Premise Match	75m	South East
Signs Neon &/or Illuminated	Health Signs	116 Wellington St Waterloo 2017	62592	Premise Match	75m	South East
Gift Shop Supplies Mfrs &/or W/salers	Martinvale Pty Ltd	98 Wyndham St Alexandria 2015	47636	Premise Match	75m	South West
Motor Accessories Mfrs &/or Imps &/or W/salers	Mercury Mufflers (NSW) Pty Ltd	86 Wyndham St., Alexandria 2015	52034	Premise Match	75m	South West
Motor Exhaust Systems &/or Mufflers Mfrs &/or Dists &/or Fitters	Mercury Mufflers Pty Ltd	86 Wyndham St Alexandria 2015	53433	Premise Match	75m	South West
Motor Garages & Service Stations	Quel-A-Drive Pty. Ltd.	68 Wyndham St. Alexandria	53791	Premise Match	77m	West
Office Equipment &/or Supplies Mfrs &/or Imps &/or W/salers	Aztec Office Systems Pty Ltd	184 Cope St Waterloo 2017	55953	Premise Match	79m	South
Motor Garages & Service Stations	Tony's Service Station	11 Henderson Rd., Alexandria	53949	Premise Match	92m	North West
Engine Reconditioners	New Process Engine Reconditioning	186 Cope St Waterloo 2017	43288	Premise Match	95m	South
Haberdashery Wholesale	Bowner Robert C. Pty. Ltd.	86 Cope St Redfern 2016	48085	Premise Match	96m	North
Sewing Cotton, Silk &/or Thread Mfrs &/or Dists	Sewing Thread Specialist Pty Ltd	86 Cope St redfern 2016	61985	Premise Match	96m	North
Cleanser &/or Cleaning Preparations Mfrs &/or Dists	Soap Collection, The,	23 Botany Rd., Alexandria. 2015	39161	Premise Match	102m	North
StationersWholesale	Letts of London Pty Ltd	NBL Distribution Centre 34 Wyndham St Alexandria 2015	63272	Premise Match	116m	North West
StationersWholesale	Norman Baker & Longhurst Pty Ltd	34 Wyndham St Alexandria 2015	63277	Premise Match	116m	North West
Hardware Mfrs &/or Dists &/or W/salers	Norman Baker & Longhurst Pty. Ltd.	34 Wyndham St Alexandria 2015	48199	Premise Match	116m	North West
Importers	Academy Import Export	82 Cope St Redfern 2016	48894	Premise Match	125m	North
Motor Garages & Service Stations	Autohaus Strecker	75 Wyndham St, Alexandria 2015	53526	Premise Match	128m	West
Motor Engineers	East Star Motors Pty Ltd	43 Wyndham St Alexandria 2015	53143	Premise Match	135m	North West
Motor Panel Beaters &/or Painters Supplies	East Star Motors Pty Ltd	43 Wyndham St., Alexandria	54075	Premise Match	135m	North West
Clothing Mfrs &/or W/salers General	Vinh Hung Clothing Manufacturer	80A Cope St., Redfern. 2016.	39301	Premise Match	140m	North

Business Activity	Organisation	Address	Ref No.	Location Confidence	Distance	Direction
Air Conditioning Industrial, Commercial &/or Domestic Specialists	Carrera Refrigeration & Air Conditioning Pty. Ltd.	161 Botany Rd., Waterloo 2017	33914	Premise Match	149m	South

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1991 Business Directory Motor Garages & Service Stations

Motor Garages & Service Stations from the 1991 UBD Business Directory within 1km of the site:

Business Activity	Organisation	Address	Ref No.	Location Confidence	Distance	Direction
Motor Garages & Service Stations	Quel-A-Drive Pty. Ltd.	68 Wyndham St. Alexandria	53791	Premise Match	77m	West
Motor Garages & Service Stations	Tony's Service Station	11 Henderson Rd., Alexandria	53949	Premise Match	92m	North West
Motor Garages & Service Stations	Autohaus Strecker	75 Wyndham St, Alexandria 2015	53526	Premise Match	128m	West
Motor Garages & Service Stations	Regent Auto Repairs	156 Regent St., Redfern	53808	Premise Match	219m	North
Motor Garages & Service Stations	Redfern Service Station	131 Regent St., Redfern	53803	Premise Match	389m	North
Motor Garages & Service Stations	J.S.H. Motors	82 Henderson Rd., Alexandria. 2015	53751	Premise Match	423m	West
Motor Garages & Service Stations	Waterloo Service Station	McEvoy St., Waterloo	53985	Road Match	479m	South East
Motor Garages & Service Stations	Automotive Quick Service	230 Young St, Waterloo 2017	53527	Premise Match	740m	East
Motor Garages & Service Stations	RL Cabs Service Centre	20 O'Riordan St., Alexandria	53814	Premise Match	989m	South

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1970 Historical Business Directory Records

Waterloo Metro Site, Waterloo, NSW 2017



Legend

- Site Centre
- Site Boundary
- Report Buffer
- Property Boundary
- 1970 Business Directory Premise Match
- 1970 Business Directory Road Match
- 1970 Business Directory Area Match

Scale: 0 25 50 100 Meters

Data Sources: Universal Business Directories (UBD) - Derived Data Licensed from Hardie Grant.
Property Boundaries & Topographic Data: © Land and Property Information (a division of the Department of Finance and Services) 2016

Coordinate System: GDA 1994 MGA Zone 56

Date: 18 October 2016

Historical Business Directories

Waterloo Metro Site, Waterloo, NSW 2017

1970 Business Directory Records

Records from the 1970 UBD Business Directory within 150m of the site:

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
CLEANERS-GENERAL (C380)	Austral Window & General Cleaning Co., 87 Botany Rd.,Waterloo, 2017	281816	Premise Match	0m	Onsite
CLEANERS-INDUSTRIAL (C383)	Austral Window & General Cleaning Co., 87 Botany Rd.,Waterloo, 2017	281848	Premise Match	0m	Onsite
WINDOW CLEANERS (W230)	Austral Window & General Cleaning Co.,87 Botany Rd.,Waterloo,2017	374298	Premise Match	0m	Onsite
FORGINGS MANUFACTURERS (F507)	Bohler Steels Pty.Ltd.,146 Botany St.,Waterloo	305861	Premise Match	0m	Onsite
FOOTWEAR MFRS.-SANDALS (F480)	Verka Shot Co,87 Botany Rd,Waterloo	305417	Premise Match	0m	Onsite
FOOTWEAR MFRS.-SANDALS (F480)	Verka Shot Co,87 Botany Rd,Waterloo	305416	Premise Match	0m	Onsite
CONFECTIONERS-RETAIL (C620)	Abood, J., 81 Botany Rd., Waterloo	285350	Premise Match	0m	Onsite
PRINTERS' MACHINERY MFRS./DISTRIBUTORS (P814)	ALEX COWAN MACHINERY 128 BOTANY ST.,WATERLOO,2017	351733	Premise Match	0m	Onsite
PRINTERS' FURNISHERS (P790)	ALEX COWAN MACHINERY,128 BOTANY ST.,WATERLOO,2017	351653	Premise Match	0m	Onsite
CLOTHING MFRS. &/OR W'SALERS-SPORTSWEAR (C473)	Arkabe Pty. Ltd., 168-170 Botany St, Waterloo	283562	Premise Match	0m	Onsite
CLOTHING MFRS. &/OR W'SALERS-LADIES' SKIRTS (C453)	Arkabe Pty. Ltd., 168-170 Botany St., Waterloo	283186	Premise Match	0m	Onsite
UPHOLSTERERS-MFRG.(U060)	Artwood Furniture Pty.Ltd.,107 Botany Rd.,.Waterloo	372204	Premise Match	0m	Onsite
UPHOLSTERERS (U050)	Artwood Furniture Pty.Ltd.,107 Botany Rd.,Waterloo	371997	Premise Match	0m	Onsite
FURNITURE-HOUSEHOLD-RETAILERS RETAILERS (F740)	Artwood Furniture Pty.Ltd.,107 Botany Rd.,Waterloo	309357	Premise Match	0m	Onsite
FURNITURE-LOUNGE SUITES-MFRS.&/OR W'SALERS (F755)	Artwood Furniture Pty.Ltd.,107 Botany Rd.,Waterloo	309713	Premise Match	0m	Onsite
METAL EXTRUSION TOOLING	BOHLER STEELS PTY LTD,146 BOTANY ST.,WATERLOO,2017,P.O. BOX 57,WATERLOO	329737	Premise Match	0m	Onsite
MACHINE KNIFE MFRS. (M010)	Bohler Steels Pty. Ltd.,146 Botany St.,Waterloo	323937	Premise Match	0m	Onsite
STEEL MERCHANTS-GENERAL (S694)	Bohler Steels Pty.Ltd.,146 Botany St.,Waterloo,2017.	365558	Premise Match	0m	Onsite
BOOKBINDERS (B527)	Bragg, E& Sons Pty. Ltd., 130-134 Botany St., Waterloo	268165	Premise Match	0m	Onsite
PAPER RULERS/BINDERS (P147)	Bragg,E. & Sons Pty. Ltd.,130-134 Botany St.,Waterloo	347159	Premise Match	0m	Onsite
PRINTERS-LETTERPRESS (P806)	Bragg,Edgar & Sons Pty. Ltd.,130-134 Botany St.,Waterloo	351944	Premise Match	0m	Onsite
MOTOR PAINTERS (M672)	Continental Body Repairs Pty. Ltd.,65 Botany Rd.,Waterloo	339214	Premise Match	0m	Onsite
MOTOR PANEL BEATERS (M680)	Continental Body Repairs Pty. Ltd.,65 Botany Rd.,Waterloo	339950	Premise Match	0m	Onsite
PRINTERS' FURNISHERS (P790)	Cowan Alex Machinery,128 Botany St.	351658	Premise Match	0m	Onsite
PRINTERS' MACHINERY MFRS./DISTRIBUTORS (P814)	Cowan Alex Machinery,128 Botany St.	351749	Premise Match	0m	Onsite
PRINTERS' INK MFRS./IMPORT. (P802)	Cowan Alex Machinery,128 Botany St.,Waterloo,2017.	351680	Premise Match	0m	Onsite
PRINTERS' SUPPLIES (P836)	Cowan,Aiex Machinery,128 Botany St.,Waterloo,2017.	351802	Premise Match	0m	Onsite
BOOKBINDERS (B527)	Hayles Bookbinding Service, 130-134 Botany St., Waterloo	268190	Premise Match	0m	Onsite
MILK,FRUIT JUICE BARS/CONFECTIONERS (M336)	Lang,K. & P.,101 Botany Rd.,Waterloo	330806	Premise Match	0m	Onsite
STORE & PACKING ROOM EQUIPMENT MANUFACTURERS&/OR DISTRIBUTORS (S778)	Marfleet & Weight (Sales) Pty.Ltd,55B Botany Rd,Alexandria,2015	366222	Premise Match	0m	Onsite

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
CHEMISTS-MANUFACTURING &/OR WHOLESALE (C284)	Sigma Pharmaceuticals Pty. Ltd., 89 Botany Rd., Waterloo	279947	Premise Match	0m	Onsite
SHEET METAL WORKERS MACHINERY-MFRS. &/OR MERCHANTS (S234)	Skinner,J. Pty. Ltd.,59-63 Botany Rd.,Waterloo	360825	Premise Match	0m	Onsite
MACHINERY DEALERS-SECOND-HAND (M030)	Skinner,J. pty. Ltd.,59-63 Botany Rd.,Waterloo	324099	Premise Match	0m	Onsite
WOODWORKING MACHINERY DEALERS-SECOND-HAND (W440)	Skinner,J.Pty.Ltd.,59-63 Botany Rd.,Waterloo	375090	Premise Match	0m	Onsite
ELECTRIC MOTORS-DEALERS &/OR WHOLESALERS (E210)	Skinner,J.Pty.Ltd.,59-63 Botany Rd.,Waterloo	294248	Premise Match	0m	Onsite
BISCUIT MFRS. &/OR DISTS. (B355)	Solomon, R& Co. Pty. Ltd., 136 Botany St., Waterloo	267019	Premise Match	0m	Onsite
CONDIMENT MFRS. &/OR DISTS.(C611)	Solomon, R& Co. Pty. Ltd., 136-144 Botany St., Waterloo	285347	Premise Match	0m	Onsite
GROCERS-WHOLESALE (G660)	Solomon,R. & Co. Pty. Ltd.,136-144 Botany St.,Waterloo	313232	Premise Match	0m	Onsite
MACARONI MANUFACTURERS (M005)	Solomon,R. & Co. Pty. Ltd.,136-144 Botany St.,Waterloo	323934	Premise Match	0m	Onsite
FOOD PROCESSORS/PACKERS (F430)	Solomon,R.& Co.Pty.Ltd.,136-144 Botany St.,Waterloo	305003	Premise Match	0m	Onsite
FOOD PRODUCTS MFRS. &/OR DISTS. (F432)	Solomon,R.& Co.Pty.Ltd.,136-144 Botany St.,Waterloo	305089	Premise Match	0m	Onsite
ADDRESSING MACHINE IMPS &/OR DEALERS (A110)	Spicers Business Machines, Office Equipment Division, 128 BotanySt., Waterloo, 2017	259678	Premise Match	0m	Onsite
DATA PROCESSING EQUIPMENT MFRS.	Spicers Business Machines,Office Equipment Division,128 Botany St.,Waterloo,2017	287039	Premise Match	0m	Onsite
OFFICE EQUIPMENT MFRS./ DISTRIBUTORS (O 030)	Spicers Business Machines,Office Equipment Division,128 Botany St.,Waterloo,2017	344740	Premise Match	0m	Onsite
MOTOR GARAGES & ENGINEERS (M6S6)	Total Service Station,69-83 Botany Rd.WATERLOO	338763	Premise Match	0m	Onsite
IMPORTERS (I200)	British Automatic Teleric Pty. Ltd.,BotanySt.,Redfent	318123	Road Match	0m	Onsite
CARDBOARD BOX & CARTON MANUFACTURERS (C111)	Curtis Packaging Pty. Ltd., Botany Rd., Alexandria	277461	Road Match	0m	South
PACKAGING/PACKING SPEC. (P 004)	Curtis Packaging Pty. Ltd.,Botany Rd.,Alexandria	345728	Road Match	0m	South
TYRE DEALERS,RETREADERS & VULCANIZERS (T773)	Uniroyal Tyre Service,Botany Rd.,Alexandria	371770	Road Match	0m	South
CLUBS & SPORTING BODIES (C487)	Waterloo-Alexandria Businessmen's Club Ltd(The), Cnr 217 Botany & Wellington Sts., Waterloo	284734	Road Intersection	15m	South East
WELDING EQUIPMENT & SUPPLIES MFRS.&/OR DISTS (W155)	Abel Arc Holdings Pty.Ltd.,Buckland St,Alexandria.	374084	Road Match	20m	South West
WELDING MACHINE MFRS.(W160)	Abel Arc Holdings Pty.Ltd.,Buckland St,Alexandria.	374179	Road Match	20m	South West
SPRAYING EQUIPMENT MFRS. &/OR DISTRIBUTORS (S464)	Abel Arc Industries Pty. Limited,Buckland St,Alexandria	363817	Road Match	20m	South West
ENGINEERS-ELECTRICAL (E570)	Abel Arc Industries Pty.Ltd.,Buckland St.,Alexandria	298083	Road Match	20m	South West
MIXED BUSINESSES (M408)	Raglan-Botany Street Store,125 Raglan St.,Waterloo	333657	Premise Match	21m	North
MIXED BUSINESSES (M408)	Ryan,E. C.,112 Botany St.,Waterloo	333746	Premise Match	21m	North
HOTELS-LICENSED (H690)	Abbott Hotel,47 Botany Rd.,Waterloo	317063	Premise Match	21m	North West
HOTELS-LICENSED (H690)	Cauliflower Hotel,123 Botany Rd.,Waterloo	317152	Premise Match	25m	South
BUTCHERS-RETAIL (B860)	Greenfield, Jand Son, 45 Botany Rd., Waterloo	273705	Premise Match	29m	North West
BUTCHERS-RETAIL (B860)	Mickey's Butchery, 45 Botany Rd., Waterloo	274096	Premise Match	29m	North West
BUSINESS AGENTS &/OR BROKERS (B852)	Silver & Co., 130 Botany Rd., Alexandria	272912	Premise Match	29m	South
REAL ESTATE AGENTS/VALUERS(R205)	Sliver & Co,130 Botany Rd.ALEXANDRIA	356023	Premise Match	29m	South
MIXED BUSINESSES (M408)	Dermir,H.,123 Raglan St.,Waterloo	332476	Premise Match	31m	North
CHEMISTS-PHARMACEUTICAL (C286)	Kirby, MC., 43 Botany Rd., Waterloo	280653	Premise Match	36m	North
CHEMISTS-MANUFACTURING &/OR WHOLESALE (C284)	Ethnor Pty. Ltd., 108 Botany Rd., Alexandria	279840	Premise Match	38m	South West
MERCHANTS-GENERAL (M240)	Hong Kong Mercantile Pty. Ltd.,82 Botany Rd.,Redfern	329455	Premise Match	38m	West
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Waterloo Auto Port (Neptune),74-82 Botany Rd.ALEXANDRIA	341607	Premise Match	38m	West

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
PRINTERS-LETTERPRESS (P806)	Berk Printing (Sales) Pty. Ltd.,94 Botany Rd.,Alexandria.	351926	Premise Match	39m	South West
PRICE TICKETING SYSTEM MFRS. (P778)	Berk Printing Co. Pty. Ltd.,94 Botany Rd. Alexandria	351597	Premise Match	39m	South West
LABELS-GENERAL (L020)	Berk Printing Co. Pty. Ltd.,94 Botany Rd.,Alexandria	322287	Premise Match	39m	South West
BOOKBINDERS (B527)	Berk Printing Co., 94 Botany Rd., Alexandria	268160	Premise Match	39m	South West
TICKET/TAG MFRS.(T330)	Berk Printing Co.Pty.Ltd.,94 Botany Rd.,Alexandria	368572	Premise Match	39m	South West
BUILDERS' SUPPLIERS (B814)	Brentware (N.S.W.) Pty. Ltd., 86-92 Botany Rd., Waterloo	271250	Premise Match	39m	West
MOTOR PANEL BEATERS (M680)	Chapman Walter Pty. Ltd.,86-88 Botany Rd.,Alexandria	339925	Premise Match	39m	West
MOTOR RADIATOR MFRS. (M696)	Chapman,Walter Pty. Ltd.,86 Botany Rd.,Alexandria	340654	Premise Match	39m	West
MOTOR RADIATOR SPECIALISTS &/OR REPAIRERS (M700)	Chapman,Walter Pty. Ltd.,86 Botany Rd.,Alexandria	340675	Premise Match	39m	West
MOTOR BODY REPAIRS/CONVERTERS (M496)	Chapman,Walter Pty. Ltd.,86-88 Botany Rd.,Alexandria	335298	Premise Match	39m	West
MOTOR CAR RADIO SPECS. (M544)	Chapman,Walter Pty. Ltd.,86-88 Botany Rd.,Alexandria	335696	Premise Match	39m	West
MOTOR PAINTERS (M672)	Chapman. Walter Pty. Ltd.,86-88 Botany Rd.,Alexandria	339191	Premise Match	39m	West
CASTOR & WHEEL MFRS. &/OR DISTS (C180)	Ford, CAPty. Ltd., 86 Botany Rd., Waterloo	278677	Premise Match	39m	West
LEAD MERCHANTS/SUPPLIER5 (L340)	Landow Bros.,6 Henderson Rd.,Alexandria	322877	Premise Match	43m	North West
METAL MERCHANTS (M260)	Landow Bros.,6 Henderson Rd.,Alexandria	329791	Premise Match	43m	North West
SCRAP METAL MERCHANTS (S161)	Undow Bros.,6 Henderson Rd.,Alexandria	359909	Premise Match	43m	North West
BUILDERS' SUPPLIERS (B814)	Vetro Glass Co. Pty. Ltd., 62-74 Botany Rd., Alexandria	271616	Premise Match	43m	North West
SHOP/OFFICE FITTERS (S276)	Vetro Glass Co. Pty. Ltd.,62-72 Botany Rd.,Alexandria	361415	Premise Match	43m	North West
MIRROR MANUFACTURERS (M400)	Vetro Glass Co. Pty. Ltd.,627-74 Botany Rd.,Alexandria	331853	Premise Match	43m	North West
GLASS BEVELLERS/CUTTERS (G210)	Vetro Glass Co.Pty.Ltd.,62-72 Botany Rd.,Alexandria	311097	Premise Match	43m	North West
GLASS MERCHANTS (G260)	Vetro Glass Co.Pty.Ltd.,62-72 Botany Rd.,Alexandria	311244	Premise Match	43m	North West
GLAZIERS (G320)	Vetro Glass Co.Pty.Ltd.,62-72 Botany Rd.,Alexandria	311392	Premise Match	43m	North West
GLASSWARE & CRYSTALWARE IMPORTS.&/OR W'SALERS (G300)	Vetro Glass Co.Pty.Ltd.,62-74 Botany Rd.,Alexandria	311309	Premise Match	43m	North West
GLASSWARE/CRYSTALWARE MFRS. (G310)	Vetro Glass Co.Pty.Ltd.,62-74 Botany Rd.,Alexandria	311316	Premise Match	43m	North West
GLASS BRICK MFRS. &/OR DISTS. (G220)	Vetro Glass'Co.Pty.Ltd.,62-72 Botany Rd.,Alexandria	311102	Premise Match	43m	North West
UPHOLSTERERS (U050)	Lock Lee & Co.,134-136 Botany Rd.,Alexandria	372074	Premise Match	44m	South
FURNITURE/CABINET MAKERS'HARDWARE MFRS.(F693)	Lock Lee & Co.,136 Botany Rd.,Alexandria	308929	Premise Match	44m	South
FURNITURE-BEDROOM-MFRS.&/OR WHOLESALERS (F700)	Lock,Lee & Co.,136 Botany Rd.,Alexandria	309001	Premise Match	44m	South
FURNITURE-OCCASIONAL-MFRS.&/OR WHOLESALERS (F765)	Lock,Lee & Co.,136 Botany Rd.,Alexandria	309830	Premise Match	44m	South
FURNITURE-OFFICE-MFRS. &/OR WHOLESALERS (F770)	Lock,Lee & Co.,136 Botany Rd.,Alexandria	309911	Premise Match	44m	South
EASTERN GOODS MERCHANTS (E035)	Lock,Lee & Co.,136 Botany Rd.,Alexandria	293321	Premise Match	44m	South
FURNITURE-GENERAL-MFRS. &/OR WHOLESALERS (F730)	Lock,Lee St Co.,136 Botany Rd.,Alexandria	309258	Premise Match	44m	South
PLAN PRINTERS (P528)	S.D.S. PRINTING PTY. LTD,176 BOTANY ST.,WATERLOO,2017	349221	Premise Match	46m	South
PLAN PRINTERS (P528)	S.D.S. Printing Pty. Ltd.,176 Botany St.,Waterloo.	349222	Premise Match	46m	South
DRAWING OFFICE SUPPLIES (D543)	S.D.S.Printing Pty.Ltd.,176 Botany St.,Waterloo	290750	Premise Match	46m	South
ENGINEERS-CONSULTING (E550)	S.D.S.Printing Pty.Ltd.,176 Botany St.,Waterloo	297851	Premise Match	46m	South
DRAUGHTSMEN (D541)	S.D.S.Printing Pty.Ltd.,176 Botany St.,Waterloo	290717	Premise Match	46m	South

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
BLUE PRINTERS (B442)	S.D.SPrinting Pty. Ltd., 176 Botany St., Waterloo	267384	Premise Match	46m	South
DRAUGHTSMEN (D541)	Sydney Drafting & Service Pty.Ltd.,176 Botany St.,Waterloo	290719	Premise Match	46m	South
ENGINEERS-CONSULTING (E550)	Sydney Drafting Service Pty.Ltd.,176 Botany St.,Waterloo	297864	Premise Match	46m	South
FISH MERCHANTS-RETAIL (F245)	Stans Fish Shop,39 Botany Rd.,Waterloo	303772	Premise Match	47m	North
HOTELS-LICENSED (H690)	Cricketers' Arms Hotel,56-58 Botany Rd.,Alexandria	317191	Premise Match	51m	North West
CHINA, CROCKERY, CRYSTAL,CUTLERY, EARTHENWARE, GLASSWARE & SILVERWARE DEALERS (C307)	McDonald Montgomery & Co., 120 Wellington St., Waterloo,2017	281493	Premise Match	51m	South East
CAFE EQUIPMENT & SUPPLIES (C027)	McDonald Montgomery & Co., 120 Wellington St., Waterloo,2017	275264	Premise Match	51m	South East
CHINA, & CROCKERY MFRS., IMPS.&/OR WHOLESALERS (C304)	McDonald Montgomery & Co., 120 Wellington.St., Waterloo,2017	281364	Premise Match	51m	South East
CUTLERY IMPS.&/OR W'SALERS (C789)	McDonald Montgomery & Co.,120 Wellington St.,Waterloo,2017	286715	Premise Match	51m	South East
HOSPITAL EQUIPMENT IMPORTS.&/OR DISTRIBUTORS (H590)	McDonald Montgomery & Co.,120 Wellington St.,Waterloo,2017	316751	Premise Match	51m	South East
HOSPITAL EQUIPMENT MFRS. &/OR SUPPLIERS (H600)	McDonald Montgomery & Co.,120 Wellington St.,Waterloo,2017	316810	Premise Match	51m	South East
MANCHESTER MANUFACTURERS/WHOLESALERS (M080)	McDonald Montgomery & Co.,120 Wellington St.,Waterloo,2017	324524	Premise Match	51m	South East
HOTEL/MOTEL EQUIPMENT/SUPPLIES (H680)	McDonald,Montgomery & Co.,120 Wellington St.,Waterloo,2017	317023	Premise Match	51m	South East
LINEN MFRS.,IMPORTERS &/OR WHOLESALERS (L520)	McDonald,Montgomery & Co.,120 Wellington St.,Waterloo,2017	323438	Premise Match	51m	South East
MOTEL EQUIPMENT &/OR SUPPLIES (M441)	United Linen & Crocery Pty. Ltd.,120 Wellington St.,Waterloo.	334376	Premise Match	51m	South East
FRUITERERS/GREENGROCERS (F640)	Khoury,N.M.,37 Botany Rd.,Waterloo	307325	Premise Match	53m	North
BUTCHERS-RETAIL (B860)	Phillips, AF., 54 Botany Rd., Alexandria	274330	Premise Match	56m	North West
BUTCHERS-RETAIL (B860)	Phillis, AF., 54 Botany Rd., Alexandria	274332	Premise Match	56m	North West
BUILDING ALTERATIONS & REPAIRS (B816)	Veney, GC & Sons, 138-142 Botany Rd., Alexandria	271703	Premise Match	57m	South
HOUSE MAINTENANCE SPECS. (H720)	Veney,G. C. & Sons,138-142 Botany Rd.,Alexandria	317905	Premise Match	57m	South
PLUMBERS,GASFITTERS/DRAINLAYERS(P608)	Veney,G. C. & Sons,138-142 Botany Rd.ALEXANDRIA	350823	Premise Match	57m	South
ELECTRIC TOOLS (PORTABLE) MFRS.&/OR DISTS.(E275)	Black & Decker (A/asia) Pty.Ltd.,133 Botany Rd.,Waterloo.	294558	Premise Match	58m	South
CRANES.-MOBILE-PROPRIETORS &/OR HIRERS (C737)	Richards, RPty. Ltd., 100 Botany St., Alexandria	286342	Premise Match	59m	North
CARRIERS & CARTAGE CONTRACTORS (C150)	Richards, RPty. Ltd., 100 Botany St., Waterloo	278296	Premise Match	59m	North
EARTH-MOVING CONTRACTORS (E010)	Richards,R.Pty.Ltd.,100 Botany St.,Waterloo	293188	Premise Match	59m	North
CHEMISTS-PHARMACEUTICAL (C286)	Karrs' Pharmacy, 52 Botany Rd., Alexandria	280613	Premise Match	59m	North West
CAFES, COFFEE LOUNGES, Etc. (C030)	Canton Cafe, 35 Botany Rd., Waterloo	275425	Premise Match	60m	North
MOTOR TOWING SERVICES (M744)	A. & A. Towing Services Pty. Ltd.,142 Botany Rd.,Alex.	342378	Premise Match	63m	South
BUILDERS & CONTRACTORS (B800)	Gabney Constructions Pty. Ltd., 142 Botany Rd., Alexandria	270120	Premise Match	63m	South
MOTOR PANEL BEATERS (M680)	Alexandria Car Replacement Parts,50 Botany Rd.,Redfern	339788	Premise Match	64m	North West
PAINTERS-SPRAY (P096)	Dana Pty. Ltd.,50 Botany Rd.,Alexandria	346778	Premise Match	64m	North West
SECOND-HAND DEALERS (S179)	Parsieglo,K. H.,50 Botany Rd.,Alexandria	360224	Premise Match	64m	North West
GROCERS-RETAIL (G655)	Hudson M.,117 Wellington St.,Waterloo	312581	Premise Match	66m	South East
SANDWICH/LUNCHEON SHOPS (S065)	Hamburger Lunch,3a Henderson Rd.,Alexandria	358718	Premise Match	68m	North West
MOTOR GARAGES & ENGINEERS (M6S6)	Precision Motor Engineering Co.,144 Botany Rd.ALEXANDRIA	338444	Premise Match	70m	South
MOTOR BODY REPAIRS/CONVERTERS (M496)	Summer Motors,144 Botany Rd., Alexandria	335411	Premise Match	70m	South

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
MOTOR PANEL BEATERS (M680)	Summer Motors,144 Botany Rd.,Alexandria	340452	Premise Match	70m	South
MOTOR TRIMMERS (M748)	Summer Motors,144 Botany Rd.,Alexandria	342696	Premise Match	70m	South
ADVERTISING DISPLAY SPEC. (A160)	Murphy William & Son Pty. Ltd., 60 Wyndham St.,Alexandria, 2015	260179	Premise Match	75m	North West
PLASTIC FABRICATORS Cr VACUUM FORMERS (P556)	Murphy,William & Son Pty. Lid.,60 Wyndham St.,Alexandria,2015	349551	Premise Match	75m	North West
PLASTIC MFRS. &/OR MOULDERS (P580)	Murphy,William & Son Pty. Ltd.,60 Wyndham St.,Alexandria,2015	349898	Premise Match	75m	North West
PACKAGING/PACKING SPEC. (P 004)	Murphy,William & Son Pty. Ltd.,60 Wyndham St.,Alexandria,2015	345786	Premise Match	75m	North West
PLASTIC CONTAINER MFRS. &/OR DISTRIBUTORS (P549)	Murphy,William & Son Pty. Ltd.,60 Wyndham St.,Alexandria,2015	349380	Premise Match	75m	North West
PLASTIC DISPLAY UNITS (P553)	Murphy,William & Son Pty. Ltd.,60 Wyndham St.,Alexandria,2015	349473	Premise Match	75m	North West
EMBOSSED SEALS & LABELS	ARGENT MANUFACTURING CO PTY LTD,116 Wellington ST.,WATERLOO-P.O.BOX 10-WATERLOO,2017	296764	Premise Match	75m	South East
PRINTERS-LETTERPRESS (P806)	Argent Manufacturing Co. Pty. Ltd.,116 Wellington St.,Waterloo	351894	Premise Match	75m	South East
EMBOSSING SPECIALISTS (E412)	Argent Manufacturing Co.Pty.Ltd.,116 Wellington St.,Waterloo.	296767	Premise Match	75m	South East
CARDBOARD BOX & CARTON MANUFACTURERS (C111)	Argent Manufacturing CoPty.Ltd., 116 Wellington St.,Waterloo	277445	Premise Match	75m	South East
LABELS-ADHESIVE (L015)	Stickfast Labels Pty. Ltd.,116 Wellington St.,Waterloo,2017. 8	322281	Premise Match	75m	South East
IMPORTERS (I200)	Sasot Manufacturing Co. Pty. Ltd,86 Wyndham St,Alexandria	318703	Premise Match	75m	South West
KNITTING MILLS (K095)	Scotchcraft Knitting Mills Pty. Ltd,86 Wyndham St.,AJex	322215	Premise Match	75m	South West
CLOTHING MFRS. &/OR W'SALERS-KNITTED GOODS (C443)	Scotchcraft Pty. Ltd., 86 Wyndham St., Alexandria	282689	Premise Match	75m	South West
CLOTHING MFRS. &/OR W'SALERS-LADIES' FROCKS & SUITS (C449)	Sontag, G Pty. Ltd., 86 Wyndham St., Alexandria	283121	Premise Match	75m	South West
CLOTHING MFRS. &/OR W'SALERS-KNITTED GOODS (C443)	Sontag, GPty. Ltd., 86 Wyndham St., Alexandria	282698	Premise Match	75m	South West
STEEL IMPORTERS (S679)	Bohler Steels Pty. Ltd.,146 Botany Rd.,Waterloo.	365434	Premise Match	76m	South
STEEL MERCHANTS-ALLOY/TOOLSTEEL (S685)	Bohler Steels Pty. Ltd.,146 Botany Rd.,Waterloo.	365494	Premise Match	76m	South
SANDWICH/LUNCHEON SHOPS (S065)	Freshly-Cut Sandwiches,146 Botany Rd.,Alexandria	358703	Premise Match	76m	South
SANDWICH/LUNCHEON SHOPS (S065)	Freshly-Cut Sandwiches,146 Botany Rd.,Alexandria	358702	Premise Match	76m	South
MOTOR GARAGES & ENGINEERS (M6S6)	Quiet-A-Drfve Pty. Ltd.,68 Wyndham St.ALEXANDRIA	338463	Premise Match	76m	West
MOTOR GEAR SPECIALISTS (M640)	Quiet-a-Drive Pty. Ltd.,68 Wyndham St.,Alexanrdia.	338952	Premise Match	76m	West
FOOTWEAR WHOLESALERS &/OR DISTRIBUTORS (F505)	Wieder,S.M.Pty.Ltd.,66 Wyndham St.,Alexandria	305848	Premise Match	76m	West
RADIO &/OR TELEVISION SALES & SERVICEMEN (R090)	Commodore T.V. Service Pty. Ltd.,31 Botany Rd.WATERLOO	354231	Premise Match	77m	North
MACHINERY VALUATORS (M055)	Blnskln,A. W. & Co.,5-7 Henderson Rd.,Alexandria	324375	Premise Match	77m	North West
UPHOLSTERERS (U050)	Harcraft Products,64 Wyndham St.,Alexandria	372058	Premise Match	77m	West
FURNITURE-OCCASIONAL-MFRS.&/OR WHOLESALERS (F765)	Le-Grest & Co.,64 Wyndham St.,Alexandria	309829	Premise Match	77m	West
FURNITURE-HOUSEHOLD-RETAILERS RETAILERS (F740)	Le-Grest St Co.,64 Wyndham St.,Aleandria	309499	Premise Match	77m	West
LEATHER GOODS MFRS. &/OR WHOLESALERS (L400)	Lizard & Co.,72 Wyndham St.,Alexandria	322983	Premise Match	77m	West
TRAVEL GOODS MFRS.(T650)	Lizard & Co.,72 Wyndham St.,Alexandria	371213	Premise Match	77m	West
SAMPLE CASE MANUFACTURERS/DISTRIBUTORS (S053)	Lizard & Co.,72 Wyndham St.,Alexandria	358525	Premise Match	77m	West
UPHOLSTERERS-MFRG.(U060)	Marcraft Products,64 Wyndham St.,Alexandria	372214	Premise Match	77m	West
FURNITURE-GENERAL-MFRS. &/OR WHOLESALERS (F730)	Marcraft Products,64 Wyndham St.,Alexandria	309264	Premise Match	77m	West
FURNITURE-OCCASIONAL-MFRS.&/OR WHOLESALERS (F765)	Marcraft Products,64 Wyndham St.,Alexandria	309833	Premise Match	77m	West

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
HOTELS-LICENSED (H690)	Lord Raglan Hotel,12 Henderson Rd.,Alexandria	317411	Premise Match	79m	North West
OPTICAL SUPPLIES-MFRG. &/OR WHOLESALE (O 260)	Sun-Art Pty. Ltd.,184 Botany St.,Waterloo.	345257	Premise Match	80m	South
STEEL SECTION ROLLING	STEEL & PIPE BENDERS PTY LTD,78-82 WYNDHAM ST.,ALEXANDRIA	365680	Premise Match	80m	West
PIPE BENDERS &/OR FABRICATORS (P396)	Steel & Pipe Benders Pty. Ltd.,78-82 Wyndham St.,Alex.	348970	Premise Match	80m	West
ENGINEERS-FABRICATING (E580)	Steel & Pipe Benders Pty.Ltd.,78 Wyndham St.,Alexandria.	298616	Premise Match	80m	West
TUBE BENDERS (T695)	Steel & Pipe Benders Pty.Ltd.,78-82 Windham St.,Alexandria	371422	Premise Match	80m	West
WELDERS-ELECTRIC &/OR OXY(W145)	Steel & Pipe Benders Pty.Ltd.,78-82 Wyndham St.,Alexandria	373981	Premise Match	80m	West
TAILORS-LADIES'/GENT'S (T015)	Pavlou,G.,29 Botany Rd.,Waterloo	366846	Premise Match	82m	North
BUTCHERS-RETAIL (B860)	Barrett Bros., 29a Botany Rd., Waterloo	273163	Premise Match	83m	North
BUTCHERS-RETAIL (B860)	Olympia Meat Butchery, 29a Botany Rd., Waterloo	274241	Premise Match	83m	North
BEAUTY SALONS &/OR LADIES' HAIRDRESSERS (B260)	Norlee Salon, 42 Botany Rd., Redfern	266420	Premise Match	83m	North West
PRINTERS-LETTERPRESS (P806)	Ray Printing Co.,150 Botany Rd.,Alexandria	352302	Premise Match	83m	South
PRINTERS-LITHOGRAPHIC (OFFSET) (P810)	Ray Printing Co.,150 Botany Rd.,Alexandria	352697	Premise Match	83m	South
GROCERS-RETAIL (G655)	Prince's Grocery,27 Botany Rd.,Waterloo	312909	Premise Match	89m	North
FRUITERERS/GREENGROCERS (F640)	Choy,J.,40 Botany Rd.,Alexandria	306839	Premise Match	90m	North West
FRUITERERS/GREENGROCERS (F640)	Sue Sun,40 Botany Rd.,Alexandria	307996	Premise Match	90m	North West
MOTOR ENGINEERS (M626)	Nicolosi,W.,154 Botany Rd.,Alexandria	337097	Premise Match	90m	South
MIXED BUSINESSES (M408)	Buckland-Wyndham Corner,23 Buckland St.,Alexandria	332194	Premise Match	90m	South West
MOTOR SPARE PARTS DEALERS-RETAIL (M728)	Central Service Station,11 Henderson Rd.,Alexandria	341771	Premise Match	92m	North West
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Central Service Station,11 Henderson Rd.ALEXANDRIA	340958	Premise Match	92m	North West
MOTOR GEAR SPECIALISTS (M640)	McGuckin & 5mith Pty. Ltd.,11 Henderson Rd.,Alexandria	338946	Premise Match	92m	North West
MOTOR STEERING SPECIALISTS (M736)	McGuckln & Smith Pty. Ltd.,11 Henderson Rd.,Alexandria	342332	Premise Match	92m	North West
MOTOR STEERING SPECIALISTS (M736)	Smith,Leslie J. Pty. Ltd.,11 Henderson Rd.,Alexandria	342350	Premise Match	92m	North West
MOTOR GEAR SPECIALISTS (M640)	Smith,Leslie J. Pty. Ltd.,11 Henderson Rd.,Alexandria	338953	Premise Match	92m	North West
MOTOR CARBURETTOR/TUNING SPECIALISTS (M564)	Smith,Leslie J. Pty. Ltd.,11 Henderson Rd.,Alexandria	336461	Premise Match	92m	North West
MOTOR ENGINE RECONDITIONERS (M624)	Smith,Leslie J. Pty. Ltd.,11 Henderson Rd.,Alexandria	337070	Premise Match	92m	North West
MOTOR BRAKE SERVICES (M512)	Smith,Leslie J. Pty. Ltd.,11 Henderson Rd.,Alexandria	335558	Premise Match	92m	North West
MOTOR GARAGES & ENGINEERS (M6S6)	Smith,Leslie J. Pty. Ltd.,11 Henderson Rd.ALEXANDRIA	338612	Premise Match	92m	North West
FOOTWEAR RETAILERS (F495)	Ida Shoe Store,38 Botany Rd.,Alexandria	305599	Premise Match	94m	North West
FOOTWEAR RETAILERS (F495)	Ida Shoe Store,38 Botany Rd.,Alexandria	305600	Premise Match	94m	North West
MOTOR GARAGES & ENGINEERS (M6S6)	Wyndham Service Centre,Wyndham St.ALEXANDRIA	338920	Road Match	94m	South
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Wyndham Service Centre,Wyndham St.ALEXANDRIA	341647	Road Match	94m	South
FINANCIERS/FINANCE AGENTS (F180)	Russell Plan Pty.Ltd.(The),186 Botany St.,Waterloo	303040	Premise Match	95m	South
CASTOR DISTRIBUTORS	BRENTWARE PTY LTD,86 BOTANY ST., WATERLOO, 2017	278683	Premise Match	96m	North
FURNITURE-OFFICE-MFRS. &/OR WHOLESALERS (F770)	Lee,A.P.& Sons,156 Botany Rd.,Alexandria	309909	Premise Match	96m	South
UPHOLSTERERS (U050)	Lee,A.P.& Sons,156 Botany Rd.,Alexandria	372073	Premise Match	96m	South
FURNITURE REPAIRERS/REMODELLERS (F790)	Lee,A.P.A Sons,156 Botany Rd.,Alexandria	308904	Premise Match	96m	South

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
FOOTWEAR RETAILERS (F495)	Ada Shoe Store,36 Botany Rd.,Alexandria	305437	Premise Match	99m	North West
MERCERS-MEN'S & BOYS' OUTFITTERS(M232)	Lang's Mercery,36 Botany Rd.,Alexandria	328990	Premise Match	99m	North West
SMALLGOODS MANUFACTURERS &/OR WHOLESALERS (S371)	Dandy Bacon & Smallgoods,Phillip St.,Redfern.	361955	Road Match	112m	East
SMALLGOODS MANUFACTURERS &/OR WHOLESALERS (S371)	Dandy Bacon & Smallgoods,Phillip St.,Redfern.	361956	Road Match	112m	East
SMALLGOODS MANUFACTURERS &/OR WHOLESALERS (S371)	N.S.W. Bacon Products Pty. Ltd.,Phillip St.,Redfern,2016.	361974	Road Match	112m	East
HAIRDRESSERS (GENT.'S) (H070)	Dean,Wal & Sons Pty. Ltd.,30 Botany Rd.,Alexandria	313813	Premise Match	113m	North West
HAIRDRESSERS' SUPPLIES (H090)	Dean,Wal & Sons Pty. Ltd.,30 Botany Rd.,Alexandria	314601	Premise Match	113m	North West
CARPET & FLOOR COVERING PLANNERS & LAYERS (C132)	Project Floor Coverings Pty. Ltd., 158 Botany Rd., Alexandria	277684	Premise Match	114m	South
CARPET & FLOOR COVERING RETAILERS &/OR SPECIALISTS(C135)	Project Floor Coverings Pty. Ltd., 158 Botany Rd.,Alexandria	277804	Premise Match	114m	South
LINOLEUMS-MANUFACTURERS &/OR WHOLESALERS (L550)	Project Floor Coverings Pty. Ltd.,158 Botany Rd,Alexandria	323716	Premise Match	114m	South
FLOOR LAYERS (F310)	Project Floor Coverings Pty.Ltd.,158 Botany Rd.,Alexandria	304082	Premise Match	114m	South
TILE MFRS.&/OR DISTS.-FLOOR &WALL (T355)	Project Floor Coverings Pty.Ltd.,158 Botany Rd.,Alexandria	368717	Premise Match	114m	South
FLOOR COVERING-INDUSTRIAL SPECIALISTS (F307)	Project Floor Coverings Pty.Ltd.,158 Botany Rd.,Alexandria.,	304054	Premise Match	114m	South
MOTOR GARAGES & ENGINEERS (M6S6)	Alexandria Auto Port,143-159 Botany Rd.WATERLOO	337172	Premise Match	115m	South
RADIO &/OR TELEVISION SALES & SERVICEMEN (R090)	Baker,Davies & Co.,13 Botany Rd.WATERLOO	354176	Premise Match	122m	North
INTER-COMMUNICATING SYSTEMS MFRS./INSTALLERS (I610)	British Automatic Teleric Pty. Ltd.,13 BotanyRd.,Redfern	320505	Premise Match	122m	North
SANITARYWARE MANUFACTURERS &/OR DISTRIBUTORS (S080)	Graham Tiles Pty,Ltd.,150 Wyndham St.,Alexandria	359078	Premise Match	123m	South
HARDWARE DEALERS/IRONMONGERS (H230)	Graham Tiles Pty. Ltd,150 Wyndham St,Alexandria	315072	Premise Match	123m	South
BUILDERS' HARDWARE-MFRS.&/OR DISTRIBUTORS (B804)	Graham Tiles Pty. Ltd., 150 Wyndham St., Alexandria	271059	Premise Match	123m	South
BUILDERS' SUPPLIERS (B814)	Graham Tiles Pty. Ltd., 150 Wyndham St., Alexandria	271367	Premise Match	123m	South
HARDWARE MERCHANTS-WHOLESALE (H260)	Graham Tiles Pty. Ltd.,150 Wyndham St.,Alexandria	315486	Premise Match	123m	South
HOT WATER SYSTEMS-ELECTRIC MFRS.&/OR DISTS. (H640)	Graham Tiles Pty. Ltd.,150 Wyndham St.,Alexandria	316873	Premise Match	123m	South
HOT WATER SYSTEMS-GAS-MFRS.&/OR DISTRIBUTORS (H655)	Graham Tiles Pty. Ltd.,150 Wyndham St.,Alexandria	316909	Premise Match	123m	South
HOT WATER SYSTEMS-Industrial(H660)	Graham Tiles Pty. Ltd.,150 Wyndham St.,Alexandria	316926	Premise Match	123m	South
IMPORTERS (I200)	Graham Tiles Pty. Ltd.,150 Wyndham St.,Alexandria	318339	Premise Match	123m	South
SANITARY FITTINGS & HARDWARE MFRS. &/OR DISTS. (S068)	Graham Tiles Pty. Ltd.,150 Wyndham St.,Alexandria	359034	Premise Match	123m	South
MERCHANTS-GENERAL (M240)	Graham Tiles Pty. Ltd.,150 Wyndham St.,Alexandria	329413	Premise Match	123m	South
TILE MFRS.&/OR DISTS.-FLOOR &WALL (T355)	Graham Tiles Pty.Ltd.,150 Wyndham St.,Alexandria	368680	Premise Match	123m	South
TILE MFRS.&/OR DISTS.-FLOOR &WALL (T355)	Linoleum Tiles Pty.Ltd.,150 Wyndham St.,Alexandria	368697	Premise Match	123m	South
SANITARY FITTINGS & HARDWARE MFRS. &/OR DISTS. (S068)	Zieman Parker & Graham Pty. Ltd.,150 Wyndham St.Alexandria.,	359053	Premise Match	123m	South
MANCHESTER MANUFACTURERS/WHOLESALERS (M080)	Ling,William Sydney Pty. Ltd.,82 Botany St.,Waterloo	324522	Premise Match	124m	North
IMPORTERS (I200)	Ling,William Sydney Pty. Ltd.,82 Botany St.,Waterloo	318503	Premise Match	124m	North
SANDWICH/LUNCHEON SHOPS (S065)	Pie & Sandwich Bar (The),18 Henderson Rd.,Alexandria	358864	Premise Match	124m	West
FOOTWEAR RETAILERS (F495)	Glass' Personality Shoes,22-26 Botany Rd.,Alexandria	305559	Premise Match	128m	North West
BOILER PLANT IMPS. &/OR DISTS. (B495)	Carmichael, C& Son Pty. Ltd., 79 Wyndham St., Alexandria	267836	Premise Match	128m	West
BOILER REPAIRERS/SERVICEMEN (B505)	Carmichael, C& Son Pty. Ltd., 79 Wyndham St., Alexandria	267854	Premise Match	128m	West

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
BOILERMAKERS (B510)	Carmichael, C& Son Pty. Ltd., 79 Wyndham St., Alexandria	267896	Premise Match	128m	West
STEAM PLANT EQUIPMENT MFRS. &/OR DISTS. (S542)	Carmichael,C. & Son Pty. Ltd.,79 Wyndham St.,Alexandria	365028	Premise Match	128m	West
STEAM PLANT INSTALLATION SPECIALISTS (S545)	Carmichael,C. & Son Pty. Ltd.,79 Wyndham St.,Alexandria	365046	Premise Match	128m	West
WELDERS-ELECTRIC &/OR OXY(W145)	Carmichael,C.& Son Pty.Ltd.,79 Wyndham St,Alexandria	373529	Premise Match	128m	West
ENGINEERS-LAUNDRY & DRY CLEANING (E660)	Carmichael,C.& Son Pty.Ltd.,79 Wyndham St.,Alex.	300084	Premise Match	128m	West
ENGINEERS-ELECTRICAL (E570)	Carmichael,C.& Son Pty.Ltd.,79 Wyndham St.,Alexandria	298112	Premise Match	128m	West
ENGINEERS-STEAM (E760)	Carmichael,C.& Son Pty.Ltd.,79 Wyndham St.Alexandria	300975	Premise Match	128m	West
ENGINEERS-GENERAL &/OR MFRG.&/OR MECHANICAL (E615)	Carmichael,C.A Son Pty.Ltd.,79 Wyndham St.,Alexandria	298947	Premise Match	128m	West
ELECTRICAL CONTRACTORS-LICENSED FIRMS (E305)	Carmichael,C.A Son Pty.Ltd.,79 Wyndham St.,Alexandria	294983	Premise Match	128m	West
ENGINEERS-REPETITION (E735)	slmont Metal Stamping Co.Pty.Ltd.,77 Wyndham St.,Alexandria	300890	Premise Match	128m	West
BOOT & SHOE REPAIRERS (B580)	Arlstotals, PAntoniois, 212 George St., Waterloo	268698	Premise Match	131m	North East
WINE/SPIRIT MERCHANTS-WHOLESALE (W265)	Paris & Co.Pty.Ltd.,125 Botany St.,Redfern	374709	Premise Match	132m	North
PUMP MANUFACTURERS &/OR DISTRIBUTORS (P906)	Vibroflex Pty. Ltd.,125 Botany St.,Redfern	353844	Premise Match	132m	North
BUTCHERS-RETAIL (B860)	Caldwell, LJ., 7 Botany Rd., Waterloo	273308	Premise Match	138m	North
MERCHANTS-GENERAL (M240)	Falk Stadelmann & Co. Ltd.,160-168 Botany Rd. Alexandria	329391	Premise Match	139m	South
ELECTRICAL SUPPLIES/ APPLIANCES-WHOLESALE (E330)	Falks Australia Pty.Ltd.,160 Botany Rd.,Alexandria	296009	Premise Match	139m	South
ELECTRIC SWITCH & CONTROL GEAR MFRS.&/OR DISTS.(E260)	Falks Australia Pty.Ltd.,160 Botany Rd.,Alexandria	294402	Premise Match	139m	South
ELECTRIC CABLE,FLEX & WIRE MFRS.&/OR DISTS.(E055)	Falks Australia Pty.Ltd.,160 Botany Rd.,Alexandria	293375	Premise Match	139m	South
ELECTRIC LIGHT FITTINGS (SHADES,STANDARD BRACKETS,ETC)MFRS.&/OR DISTS. (E165)	Falks Australia Pty.Ltd.,160 Botany Rd.,Alexandria	293831	Premise Match	139m	South
ELECTRIC LIGHT GLOBE & ELEMENT MFRS.&/OR DISTS.(E170)	Falks Australia Pty.Ltd.,160 Botany Rd.,Alexandria	293902	Premise Match	139m	South
ELECTRIC LIGHTING SPECIALISTS-INSTALLERS &/OR DESIGNERS(E180)	Falks Australia Pty.Ltd.,160 Botany Rd.,Alexandria	293958	Premise Match	139m	South
FLUORESCENT LIGHTING SPEC. (F370)	Falks Australia Pty.Ltd.,160 Botany Rd.,Alexandria	304626	Premise Match	139m	South
FURNITURE-OCCASIONAL-MFRS.&/OR WHOLESALERS (F765)	Seymour,F.& Sons Pty.Ltd.,80 Botany St.,Waterloo	309846	Premise Match	141m	North
FURNITURE-GENERAL-MFRS. &/OR WHOLESALERS (F730)	Kafka,Paul Exclusive Furniture Pty.Ltd.,161 Botany Rd.,Waterloo	309248	Premise Match	144m	South
MEAT CANNERS (M180)	Barnes,J. Pty. Ltd.,117-123 Botany St.,Waterloo	325906	Premise Match	148m	North
MEAT EXTRACT MFRS. (M192)	Barnes,J. Pty. Ltd.,117-123 Botany St.,Waterloo	325969	Premise Match	148m	North
OILS-LINSEED-MFRS. (O 190)	Barnes,J. Pty. Ltd.,117-123 Botany St.,Waterloo	345146	Premise Match	148m	North
STOCK FOODS MANUFACTURERS&/OR DISTRIBUTORS (S757)	Barnes,James Pty.Ltd.,117-123 Botany St.,Waterloo	365861	Premise Match	148m	North

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1970 Business Directory Drycleaners & Service Stations

Drycleaners, Motor Garages & Service Stations from the 1970 UBD Business Directory within 1km of the site:

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
MOTOR GARAGES & ENGINEERS (M6S6)	Total Service Station,69-83 Botany Rd.WATERLOO	338763	Building Match	0m	Onsite
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Waterloo Auto Port (Neptune),74-82 Botany Rd.ALEXANDRIA	341607	Building Match	38m	West
MOTOR GARAGES & ENGINEERS (M6S6)	Precision Motor Engineering Co.,144 Botany Rd.ALEXANDRIA	338444	Building Match	70m	South
MOTOR GARAGES & ENGINEERS (M6S6)	Quiet-A-Drfve Pty. Ltd.,68 Wyndham St.ALEXANDRIA	338463	Building Match	76m	West
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Central Service Station,11 Henderson Rd.ALEXANDRIA	340958	Building Match	92m	North West
MOTOR GARAGES & ENGINEERS (M6S6)	Smith,Leslie J. Pty. Ltd.,11 Henderson Rd.ALEXANDRIA	338612	Building Match	92m	North West
MOTOR GARAGES & ENGINEERS (M6S6)	Wyndham Service Centre,Wyndham St.ALEXANDRIA	338920	Road Match	94m	South
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Wyndham Service Centre,Wyndham St.ALEXANDRIA	341647	Road Match	94m	South
MOTOR GARAGES & ENGINEERS (M6S6)	Alexandria Auto Port,143-159 Botany Rd.WATERLOO	337172	Building Match	115m	South
MOTOR GARAGES & ENGINEERS (M6S6)	Hawxwell & Jones Pty. Ltd.,165 Botany Rd.WATERLOO	337997	Building Match	154m	South
MOTOR GARAGES & ENGINEERS (M6S6)	Esso Service Station,10 Botany Rd.ALEXANDRIA	337748	Building Match	158m	North West
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Esso Servicenter,10 Botany Rd.REDFERN	341055	Building Match	158m	North West
MOTOR GARAGES & ENGINEERS (M6S6)	Whittingham,Alex & Sons Pty. Ltd.,40 Henderson Rd.ALEXANDRIA	338884	Building Match	202m	West
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Whittingham,Alex & Sons Pty. Ltd.,40 Henderson Rd.ALEXANDRIA	341629	Building Match	202m	West
MOTOR GARAGES & ENGINEERS (M6S6)	Town Auto Repairs,60 Botany St.REDFERN	338784	Building Match	221m	North
DRY CLEANERS,PRESSERS/DYERS (D710)	Johnson's Dry Cleaning Service,144 Renwick St.,Redfern	292355	Building Match	261m	North
DRY CLEANERS,PRESSERS/DYERS (D710)	Palms Dry Cleaners (The,130 Regent St.,Redfern	292440	Building Match	274m	North
MOTOR GARAGES & ENGINEERS (M6S6)	Renault (Aust.) Pty. Ltd.,153 George St.REDFERN	338500	Building Match	328m	North East
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	BP Everleigh Service Station,118 Regent St.REDFERN	340874	Building Match	336m	North
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	McEvoy Street Auto Port,cnr. McEvoy & George Sts.	341321	Road Intersection	343m	South East
DRY CLEANING MACHINERY & SUPPLIES-MFRS.&/OR DISTS.(D720)	Bryce,R.& Co.Ltd.,183 Botany Rd.,Waterloo	292586	Building Match	363m	South
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Esso Servicenter,Mitchell Rd.ALEXANDRIA	341097	Road Match	365m	South West
MOTOR GARAGES & ENGINEERS (M6S6)	Redfern Service Station,133 Regent St.REDFERN	338488	Building Match	367m	North
DRY CLEANERS,PRESSERS/DYERS (D710)	McDermotts,134 Pitt St.,Redfern	292402	Building Match	432m	North East
DRY CLEANERS,PRESSERS/DYERS (D710)	Personality Dry Cleaners,74 Regent St.,Redfern	292451	Building Match	447m	North
MOTOR GARAGES & ENGINEERS (M6S6)	McEvoy Street Auto Port,McEvoy St.WATERLOO	338231	Road Match	479m	South East
MOTOR GARAGES & ENGINEERS (M6S6)	International Smash Repairs,2-4 Renwick St.REDFERN	338046	Road Match	492m	North
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Regent Service Centre,Cnr. George A Redfem Sts.REDFERN	341418	Road Intersection	503m	North
MOTOR GARAGES & ENGINEERS (M6S6)	Waterloo Car Centre,762 Elizabeth St. & Wellington St.WATERLOO	338843	Road Intersection	519m	East
MOTOR GARAGES & ENGINEERS (M6S6)	Harrison,Reg. Pty. Ltd.,44 Hlles St.ALEXANDRIA	337985	Building Match	539m	South
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Smith,C. Service Station,George StREDFERN	341469	Road Match	539m	North
MOTOR GARAGES & ENGINEERS (M6S6)	Caltex Service Station,762 Elizabeth St.WATERLOO	337506	Building Match	549m	East

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
MOTOR GARAGES & ENGINEERS (M6S6)	H. & S. Auto Engineering,13 Dadley St.ALEXANDRIA	337965	Building Match	549m	West
DRY CLEANERS,PRESSERS/DYERS (D710)	Anderson Bros.(Dry Cleaners) Pty.Ltd.,46 Regent St.(& Branch)	292178	Building Match	575m	North
MOTOR GARAGES & ENGINEERS (M6S6)	Scholtz,E. N.,231 Elizabeth St.REDFERN	338581	Road Match	580m	East
DRY CLEANERS,PRESSERS/DYERS (D710)	Sunshine Home Laundry & Dry Cleaners,88 Pitt St.,Redfern	292533	Building Match	581m	North East
DRY CLEANERS,PRESSERS/DYERS (D710)	Sharp Bros.,286-288 Botany Rd.,Alexandria	292500	Building Match	613m	South
DRY CLEANERS,PRESSERS/DYERS (D710)	Dante's Dry Cleaning Service 94 Redfern St.,Redfern	292264	Building Match	640m	North East
MOTOR GARAGES & ENGINEERS (M6S6)	R.S.L. Service Station,70 George St.REDFERN	338467	Building Match	672m	North
DRY CLEANERS,PRESSERS/DYERS (D710)	Immaculate Dry Cleaning Pty.Ltd.,78 Mitchell Rd.,Alex.	292347	Building Match	677m	South West
MOTOR GARAGES & ENGINEERS (M6S6)	Waterloo Service Station,Cnr. McEvoy & Moorehead Sts.WATERLOO	338844	Road Intersection	689m	South East
MOTOR GARAGES & ENGINEERS (M6S6)	BP Waterloo Service Station,Moorehead Rd.WATERLOO	337416	Road Match	690m	East
MOTOR GARAGES & ENGINEERS (M6S6)	Smith,C. Motors,53 Pitt St.REDFERN	338611	Building Match	693m	North East
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	R.S.L. Esso Service Station,56 George St.REDFERN	341414	Building Match	698m	North
DRY CLEANING MACHINERY & SUPPLIES-MFRS.&/OR DISTS.(D720)	Lilley,Robert Industries Pty.Ltd.,88 Mitchell Rd.,Alexandria	292599	Building Match	703m	South West
MOTOR GARAGES & ENGINEERS (M6S6)	Ampol Castlereagh Service Station,292 Chalmers St.REDFERN	337198	Building Match	722m	North East
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Ampol Castlereagh Service Station,292 Chalmers St.REDFERN	340762	Building Match	722m	North East
DRY CLEANERS,PRESSERS/DYERS (D710)	Clean Overall Co.Pty.Ltd.(The),4-14 Vine St.,Redfern	292248	Building Match	793m	North
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Evans Ampol Service Station,19 Regent St.REDFERN	341108	Building Match	801m	North
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Erskineville Auto Port,Mitchell Rd.ERSKINEVILLE	341034	Road Match	807m	South West
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Golden Fleece Service Station,Bourke St.WATERLOO	341167	Road Match	815m	South East
MOTOR GARAGES & ENGINEERS (M6S6)	Rizzo,A.,621 Elizabeth St.REDFERN	338517	Building Match	822m	North East
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Federal Motor Service Station,1 Regent St.REDFERN	341113	Building Match	847m	North
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Esso Servicenter,375 Cleveland St.STRAWBERRY HILLS	341073	Building Match	850m	North East
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Donikan,A. (Caltex),149 Abercrombie St.REDFERN	341011	Building Match	856m	North
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Caltex Service Station,145 Abercrombie St.CHIPPENDALE	340924	Building Match	858m	North
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Bosler A Sargent,Cnr. Cleveland A Regent Sts.REDFERN	340858	Road Intersection	859m	North
MOTOR GARAGES & ENGINEERS (M6S6)	Field Mechanical Pty. Ltd.,21 Bourke Rd.,Alexandria,2015	337801	Building Match	898m	South
MOTOR GARAGES & ENGINEERS (M6S6)	Imperial Garage,153 Cleveland St.CHIPPENDALE	338042	Building Match	904m	North
MOTOR GARAGES & ENGINEERS (M6S6)	B.P. Kwinana Service Station,7-9 O'Riordan St.ALEXANDRIA	337242	Building Match	922m	South
MOTOR GARAGES & ENGINEERS (M6S6)	South Sydney Auto Port,589 Elizabeth St.REDFERN	338636	Building Match	928m	North East
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	South Sydney Auto Port,589 Elizabeth St.REDFERN	341481	Building Match	928m	North East
MOTOR GARAGES & ENGINEERS (M6S6)	Golden Grove Servlet Station,117 Cleveland St.CHIPPENDALE	337915	Building Match	936m	North
MOTOR GARAGES & ENGINEERS (M6S6)	Regent St. Service Station,70 Regent St.	338493	Building Match	987m	North
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Regent Street Service Station,70 Regent St.	341419	Building Match	987m	North
MOTOR GARAGES & ENGINEERS (M6S6)	Broadway Motors (Service) Pty. Ltd.,20 ORiordan St.ALEXANDRIA	337443	Building Match	989m	South
MOTOR GARAGES & ENGINEERS (M6S6)	Peter's Sales & Service,70 Darlington Rd.DARLINGTON	338416	Building Match	997m	North West

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1950 Historical Business Directory Records

Waterloo Metro Site, Waterloo, NSW 2017



Legend

- Site Centre
- Site Boundary
- Report Buffer
- Property Boundary
- 1950 Business Directory Premise Match
- 1950 Business Directory Road Match
- 1950 Business Directory Area Match

Scale: 0 25 50 100 Meters

Data Sources: Universal Business Directories (UBD) - Derived Data Licensed from Hardie Grant.
Property Boundaries & Topographic Data: © Land and Property Information (a division of the Department of Finance and Services) 2016

Coordinate System: GDA 1994 MGA Zone 56

Date: 18 October 2016

Historical Business Directories

Waterloo Metro Site, Waterloo, NSW 2017

1950 Business Directory Records

Records from the 1950 UBD Business Directory within 150m of the site:

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
HAIRDRESSERS (GENT.'S) &/OR TOBACCONISTS	Antico, R., 93a Botany Rd., Mascot	59139	Premise Match	0m	Onsite
UPHOLSTERERS	Art Wood Furniture, 107-115 Botany Rd., Waterloo	111125	Premise Match	0m	Onsite
FURNISHINGS-SOFT-MANUFACTURERS &/OR WHOLESALERS	Hall Mark Manufacturing Co., 87 Botany Rd., Waterloo	52176	Premise Match	0m	Onsite
DOWEL MANUFACTURERS	Hallmark Manufacturing Co., 87 Botany Rd., Waterloo	33312	Premise Match	0m	Onsite
DOWEL MANUFACTURERS	Hallmark Mfg. Co., 87 Botany Rd., Waterloo	33313	Premise Match	0m	Onsite
TIMBER MERCHANTS	Hallmark Mfg. Co., 87 Botany Rd., Waterloo	78218	Premise Match	0m	Onsite
MOULDING MANUFACTURERS	Hallmark Mfg. Co., 87 Botany Rd., Waterloo	87359	Premise Match	0m	Onsite
SHEET METAL WORKERS	Hodge, Bass, 67 Botany Rd., Waterloo	101731	Premise Match	0m	Onsite
ARMATURE WINDERS	T.E.B. Auto Elect. Service, 51 Botany Rd., Waterloo	2591	Premise Match	0m	Onsite
MOTOR ELECTRICIANS	T.E.B. Auto Electrical Service, 51 Botany Rd., Waterloo	83221	Premise Match	0m	Onsite
BATTERY DISTRIBUTORS	T.E.B. Batteries, 51 Botany Rd., Waterloo	6506	Premise Match	0m	Onsite
BATTERY MANUFACTURERS	T.E.B. Batteries, 51 Botany Rd., Waterloo	6548	Premise Match	0m	Onsite
BATTERY SERVICE STATIONS	T.E.B. Batteries, 51 Botany Rd., Waterloo	6649	Premise Match	0m	Onsite
MOTOR ELECTRICIANS	Taylor, A. E., 51 Botany Rd., Waterloo	83222	Premise Match	0m	Onsite
BANKS	Union Bank of Australia Ltd, 107 Botany Rd., Waterloo (and Alexandria)	6023	Premise Match	0m	Onsite
HAIRDRESSERS (GENT.'S) &/OR TOBACCONISTS	Bryson, T. E., 101 Botany Rd., Waterloo	59252	Premise Match	0m	Onsite
BOX & CASE MERCHANTS & MANUFACTURERS	Cloveliy Box Factory, 69 Botany Rd., Waterloo	11032	Premise Match	0m	Onsite
MOTOR GARAGES &/OR ENGINEERS	Feneck, J., 101 Botany Rd., Waterloo	83739	Premise Match	0m	Onsite
MOTOR PAINTERS	Feneck, J., 101 Botany Rd., Waterloo	84804	Premise Match	0m	Onsite
MOTOR PANEL BEATERS	Feneck, J., 101 Botany Rd., Waterloo	85268	Premise Match	0m	Onsite
WELDERS-ELECTRIC &/OR OXY	Feneck, J., 101 Botany Rd., Waterloo	112782	Premise Match	0m	Onsite
FURNITURE MANUFACTURERS & WHOLESALERS-GENERAL	Hollitt, G. and Co., 55 Botany St., Waterloo	52759	Premise Match	0m	Onsite
PRODUCE MERCHANTS-GRAIN & SEED-RETAIL	Kennedy, T. and Son, 119 Botany Rd., Waterloo	95551	Premise Match	0m	Onsite
MODELLERS & SCULPTORS	Luchi, I., 77 Botany Rd., Waterloo	81367	Premise Match	0m	Onsite
CHURCH SUPPLIES-STATUE MANUFACTURERS	Luchi, I., 77 Botany Rd., Waterloo	22897	Premise Match	0m	Onsite
COPPERSMITHS	Martin, R. and Co., 79 Botany Rd., Waterloo	29000	Premise Match	0m	Onsite
WELDERS-ELECTRIC &/OR OXY	Martin, R. and Co., 79 Botany Rd., Waterloo	112928	Premise Match	0m	Onsite
COPPERSMITHS	Martin, Robert & Co., 79 Botany Rd., Waterloo	29001	Premise Match	0m	Onsite
SHEET METAL WORKERS	Martin, Robert and Co., 79 Botany Rd., Waterloo	101762	Premise Match	0m	Onsite
MOTOR CARBURETTOR &TUNING SPECIALISTS	McDonell, D. Pty. Ltd., 117 Botany Rd., Waterloo	82795	Premise Match	0m	Onsite
POTATO CRISP MANUFACTURERS	Mulhall and Higgs, 87 Botany Rd., Waterloo	93612	Premise Match	0m	Onsite
FOOD PRODUCTS MANUFACTURERS	Mulhall and Higgs, 87 Botany Rd., Waterloo	46618	Premise Match	0m	Onsite

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
STATUETTE & MODEL MANUFACTURERS	Pizzol, V. and I., 77 Botany Rd., Waterloo	105128	Premise Match	0m	Onsite
CHURCH SUPPLIES-CATHOLIC	Pizzol, V. and I., 77, Botany Rd., Waterloo	22865	Premise Match	0m	Onsite
NEWSAGENTS	Ritchie, K., 75 Botany Rd., Waterloo	88307	Premise Match	0m	Onsite
MACHINERY DEALERS-SECONDHAND	Skinner, J., 59 Botany Rd., Waterloo	69948	Premise Match	0m	Onsite
MACHINERY MERCHANTS &/OR IMPORTERS	Skinner, J., 59-61 Botany Rd., Waterloo	70141	Premise Match	0m	Onsite
ASSOCIATIONS & SOCIETIES	South Sydney Homing Pigeon Soc, 117 Botany Rd., Waterloo	3880	Premise Match	0m	Onsite
FOOTWEAR MANUFACTURERS-BOOTS & SHOES	Taylor, C. S. (Sandals), 55 Botany Rd., Waterloo	46937	Premise Match	0m	Onsite
BOOT & SHOE REPAIRERS	Taylor, C. S., 55 Botany Rd., Waterloo	10695	Premise Match	0m	Onsite
NEWSAGENTS	Taylor, J. S., 75 Botany Rd., Waterloo	88384	Premise Match	0m	Onsite
WOODWORKERS & TURNERS	Wadds, F. P., 63 Botany Rd., Waterloo	114156	Premise Match	0m	Onsite
PICTURE THEATRES-SUBURBAN	Waterloo Plaza, 99 Botany Rd., Waterloo	92909	Premise Match	0m	Onsite
MILK BARS & CONFECTIONERS	Willcocks, E. A. and W, J., 121 Botany Rd, Waterloo	77551	Premise Match	0m	Onsite
GROCERS-RETAIL	Elliott, H., Wellington St., Waterloo	57216	Road Match	0m	East
MIXED BUSINESSES & GENERAL STORES	Glassby, E., Raglan St., Waterloo	80010	Road Match	0m	East
FOOTWEAR MANUFACTURERS-BOOTS & SHOES	Green Shoe Co (The), Wellington St., Waterloo	46787	Road Match	0m	East
GROCERS-RETAIL	Hall, E., Rag an St., Waterloo	57649	Road Match	0m	East
HOMES & INSTITUTIONS	Mt. Lachlan Aged Women's Home, Raglan St., Waterloo	62443	Road Match	0m	East
BUTCHERS-RETAIL	O'Sullivan Bros., Raglan St., Waterloo	14053	Road Match	0m	East
TAXIS	Waterloo Taxi Service, Wellington St., Waterloo	107528	Road Match	0m	East
MUSIC TEACHERS	Webber, W. H., Raglan St., Waterloo	87568	Road Match	0m	East
PRODUCE MERCHANTS-WHOLESALE	Beaconsfield Post Office, Botany Rd., Alexandria	95789	Road Match	0m	South
DRESSMAKERS & COSTUMIERS	Faunce, Mrs., Botany Rd., Alexandria	34466	Road Match	0m	South
ZINC MERCHANTS	Industrial Oxides Co., Botany Rd-;, Alexandria	114772	Road Match	0m	South
DELICATESSENS & SMALLGOODS DEALERS	Matha, N., Botany Rd., Alexandria	30841	Road Match	0m	South
BEAUTY SALONS &/OR LADIES' HAIRDRESSERS	Mays, Botany Rd., Alexandria	7527	Road Match	0m	South
ELECTRICAL SUPPLIES &. APPLIANCES RETAILERS	United Brass Founders, Botany Rd., Alexandria	38918	Road Match	0m	South
GASS APPLIANCES MFRS. &/OR DISTRIBUTORS	United Brass Founders, Botany Rd., Alexandria	54170	Road Match	0m	South
NEWSAGENTS	Welsh's, F. B,, Botany Rd., Alexandria	88424	Road Match	0m	South
WOOL STORES	Wool and. General Storage, Botany Rd., Alexandria	114552	Road Match	0m	South
HOTELS-LICENSED	Cricketers Arms Hotel, Cnr. Henderson and Botany Rds., Alexandria	63007	Road Intersection	19m	North West
HOTELS-LICENSED	Abbotts Hotel, 47 Botany Rd., Waterloo	62866	Premise Match	21m	North West
HOTELS-LICENSED	Australia Hotel, 106 Botany St., Waterloo	62888	Premise Match	28m	South East
BUTCHERS-RETAIL	Greenfield, J. and Son, 45 Botany .Rd., Waterloo	13586	Premise Match	29m	North West
BUTCHERS-RETAIL	Shalvey, J. A., 45 Botany Rd., Waterloo	14296	Premise Match	29m	North West
BUTCHERS-RETAIL	Shalvey, P. L., 45 Botany Rd., Waterloo	14298	Premise Match	29m	North West
BANKS	Bank of Australasia, 132 Botany Rd, Waterloo	5602	Premise Match	29m	South
MILK BARS & CONFECTIONERS	Rankine, W., 123 Raglan St., Waterloo	77238	Premise Match	31m	North
CARRIERS & CARTAGE CONTRACTORS (MASTER)	Campbell, A. E., 66 Botany St., Waterloo	20126	Premise Match	32m	North East

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
DISPLAY FITTINGS MFRS. &/OR SUPPLIERS	Art Decor Studios Pty. Ltd., 62 Botany Rd., Alexandria	32996	Premise Match	35m	North West
INTERIOR DECORATORS	Art Decor Studios Pty. Ltd., 62 Botany Rd., Alexandria	65219	Premise Match	35m	North West
DISPLAY FITTINGS MFRS. &/OR SUPPLIERS	Ornament and Display Model Co., 62 Botany Rd., Alexandria	33052	Premise Match	35m	North West
CHEMISTS-PHARMACEUTICAL	Kirby, M. C., 43 Botany Rd., Waterloo	21720	Premise Match	36m	North
DRIED FRUITS MFRS. &/OR DISTRIBUTORS	Murrumbidgee Dried Fruit Sales Pty. Ltd., 66 Botany Rd., Alexandria	34903	Premise Match	36m	North West
FRUIT JUICE EXTRACT MFRS. & MERCHANTS	Healthblest Juices, 94 Botany Rd., Alexandria	49112	Premise Match	36m	South West
HANDLE MANUFACTURERS &/OR WHOLESALERS	Kay, Ray Handle Works, 96 Botany Rd., Alexandria	60794	Premise Match	36m	South West
DRY CLEANERS, PRESSERS & DYERS	Normays Dry Cleaners, 90 Botany Rd., Alexandria	35566	Premise Match	36m	West
BAKERS-BREAD	Original' Bread Roll Bakery, 68 Botany St., Waterloo	5408	Premise Match	37m	North East
FUR DRESSERS & DYERS	Australian Fur Works, 100 Botany. Rd., Waterloo	52097	Premise Match	38m	South West
CHEMISTS-PHARMACEUTICAL	Brown, H. G., 110 Botany Rd.	21353	Premise Match	38m	South West
MOTOR GARAGES &/OR ENGINEERS	Skinner, F. L. and Sons. 102 Botany Rd., Alexandria	84374	Premise Match	38m	South West
MACHINERY MERCHANTS &/OR IMPORTERS	Feneck, J., 80 Botany Rd., Alexandria	70053	Premise Match	38m	West
METAL MERCHANTS	Feneck, J., 80 Botany Rd., Alexandria	75816	Premise Match	38m	West
MACHINERY DEALERS-SECONDHAND	Feneck, J., 80 Botany Rd., Alexandria	69920	Premise Match	38m	West
SECONDHAND DEALERS	Feneck, J., 80 Botany Rd., Alexandria	101149	Premise Match	38m	West
FURNITURE MANUFACTURERS & WHOLESALERS-GENERAL	Darlington Cabinet Works, 129 Botany Rd., Waterloo	52673	Premise Match	41m	South
GROCERS-RETAIL	Shugg, F., 41 Botany Rd., Waterloo	55669	Premise Match	42m	North
FURNITURE MANUFACTURERS & WHOLESALERS-GENERAL	Lock Lee & Co., 136 Botany Rd., Alexandria	52809	Premise Match	44m	South
FURNITURE MANUFACTURERS & WHOLESALERS-GENERAL	Lock, Lee and Co., 136 Botany Rd., Alexandria	52810	Premise Match	44m	South
WOOD BOX CONTAINER MANUFACTURERS &/OR DISTRIBUTORS	Lock, Lee and Co., 136 Botany Rd., Alexandria	113982	Premise Match	44m	South
CAFES, TEA ROOMS, COFFEE LOUNGES, Etc.	Crete Seafoods, 39 Botany Rd., Waterloo	15392	Premise Match	47m	North
BOTTLE MERCHANTS & EXCHANGES	Furze E., 39 Botany Rd., Redfern	10923	Premise Match	47m	North
CAFES, TEA ROOMS, COFFEE LOUNGES, Etc.	Kanarls, G., 39 Botany Rd., Waterloo	15629	Premise Match	47m	North
MERCERS & GENT'S OUTFITTERS	Mallick, J., 37 Botany Rd., Waterloo	74507	Premise Match	53m	North
METAL MERCHANTS	Landow Bros., 6 Henderson Rd., Alexandria	75830	Premise Match	54m	North West
LEAD MERCHANTS & SUPPLIERS	Landow Bros., 6 Henderson Rd., Alexandria	67910	Premise Match	54m	North West
BUTCHERS-RETAIL	Rawling, C., 54 Botany Rd., Alexandria	14187	Premise Match	57m	North West
PIE MANUFACTURERS	"Cousin Jacks", 35 Botany Rd., Waterloo	92922	Premise Match	60m	North
LIBRARIES-LENDING	Franklin, M., 35b Botany Rd., Waterloo	68654	Premise Match	60m	North
LIBRARIES-LENDING	Lewco Library, 3S Botany Rd., Waterloo	68743	Premise Match	60m	North
SANDWICH & LUNCHEON SHOPS	Longhurst, F. J., 35a Botany Rd., Waterloo	100358	Premise Match	60m	North
LIBRARIES-LENDING	Magson, S., 35 Botany Rd., Waterloo	68791	Premise Match	60m	North
CHEMISTS-PHARMACEUTICAL	Korrs' Pharmacy, 52 Botany Rd., Alexandria	21727	Premise Match	63m	North West
PEANUT MERCHANTS & ROASTERS	Woo Ling, 142 Botany Rd., Alexandria	91453	Premise Match	63m	South
CAFES, TEA ROOMS, COFFEE LOUNGES, Etc.	Mills, L. M. and T. D., 33a Botany Rd., Waterloo	15769	Premise Match	65m	North
JUSTICES OF THE PEACE	Hayward, W., 32 Botany St., Waterloo	66693	Premise Match	66m	North
GROCERS-RETAIL	Heidtmann, G. S., 117 Wellington St., Waterloo	57722	Premise Match	66m	South East

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
CARAVAN BUILDERS	Murphy, J. G., 117 Wellington St., Waterloo	17662	Premise Match	66m	South East
MOTOR CYCLE SIDE CAR MANUFACTURERS	Murphy, J. G., 117 Wellington St., Waterloo	83010	Premise Match	66m	South East
MOTOR PAINTERS	Wiseman's, 117 Wellington St., Waterloo	85111	Premise Match	66m	South East
BOOT & SHOE REPAIRERS	Bussey, J. A., 3 Henderson Rd., Alexandria	10030	Premise Match	68m	North West
FOOTWEAR-RETAILERS	Bussey, J. A., 3 Henderson Rd., Alexandria	47169	Premise Match	68m	North West
CAFES, TEA ROOMS, COFFEE LOUNGES, Etc.	Mills Hamburger, 33 Botany Rd., Waterloo	15768	Premise Match	71m	North
FLORISTS-RETAIL	Munger, Miss D., 33 Botany Rd., Waterloo	46079	Premise Match	71m	North
MIXED BUSINESSES & GENERAL STORES	Meares, G., 146 Botany Rd., Alexandria	80566	Premise Match	74m	South
PRINTERS-GENERAL	Argent Manuf. Co. Pty., 116 Wellington St., Waterloo	94743	Premise Match	75m	South East
CARDBOARD BOX & CARTON MANUFACTURERS	Argent Manufacturing Co, Pty. Ltd., 116 Wellington St., Waterloo	17742	Premise Match	75m	South East
FRUITERERS & GREENGROCERS	Greek Fruit Shop, 31 Botany Rd., Waterloo	50219	Premise Match	76m	North
FURNITURE MANUFACTURERS & WHOLESALERS-GENERAL	Oxley Furniture Co., 60 Wyndham St., Alexandria	52866	Premise Match	76m	West
FURNITURE MANUFACTURERS & WHOLESALERS-GENERAL	Oxley Furniture Co., 60 Wyndham St., Alexandria	52867	Premise Match	76m	West
FURNITURE MANUFACTURERS-OCCASIONAL	Oxley Furniture Co., 60 Wyndham St., Alexandria	53056	Premise Match	76m	West
CABINETMAKERS	Oxley Furniture Co., 60 Wyndham St., Alexandria	14937	Premise Match	76m	West
OFFICE FURNITURE MANUFACTURERS	Oxley Furniture Co., 60 Wyndham St., Alexandria	89491	Premise Match	76m	West
OFFICE FURNITURE RETAILERS	Oxley Furniture Co., 60 Wyndham St., Alexandria	89521	Premise Match	76m	West
FURNITURE MANUFACTURERS & WHOLESALERS-GENERAL	Warr, P. W., 60 Wyndham St., Alexandria	52960	Premise Match	76m	West
FRUITERERS & GREENGROCERS	Markou, Conn, 5 and 31 Botany Rd., Waterloo	50649	Premise Match	77m	North
GLASS MERCHANTS	Dynon, B. Pty. Ltd., 66 Wyndham St., Alexandria	54619	Premise Match	77m	West
CAFE & HOTEL SUPPLIES & EQUIPMENT	Dynon, Basil Pty. Ltd., 66 Lyndham St., Alexandria	15055	Premise Match	77m	West
HAIRDRESSERS (GENT.'S) &/OR TOBACCONISTS	King, E. W., 148 Botany Rd., Alexandria	59660	Premise Match	78m	South
HOTELS-LICENSED	Lord Raglan Hotel, 12 Henderson Rd., Alexandria	63226	Premise Match	79m	North West
BUTCHERS-RETAIL	Barrett Bros., 29a Botany Rd., Waterloo	13126	Premise Match	83m	North
CAKE SHOPS & PASTRYCOOKS	Nicer Cakes Co., 29b Botany Rd., Waterloo	17045	Premise Match	83m	North
BEAUTY SALONS &/OR LADIES' HAIRDRESSERS	Lee, Miss Norma, 42 Botany Rd., Alexandria	7433	Premise Match	83m	North West
HAIRDRESSERS (GENT.'S) &/OR TOBACCONISTS	Lee, N., 42 Botany Rd., Alexandria	59690	Premise Match	83m	North West
MOTOR PANEL BEATERS	Holley, R., 7-9 Henderson Rd., Alexandria	85314	Premise Match	85m	North West
MOTOR PANEL BEATERS	Holley, R., 7-9 Henderson Rd., Alexandria	85315	Premise Match	85m	North West
MOTOR PAINTERS	Holley, R., 7-9 Henderson Rd., Alexandria	84855	Premise Match	85m	North West
GROCERS-RETAIL	Prince's Grocery, 27 Botany Rd, Waterloo	58778	Premise Match	90m	North
DELICATESSENS & SMALLGOODS DEALERS	Princes Store, 27 Botany Rd., Waterloo	31056	Premise Match	90m	North
OILS-LUBRICATING-MERCHANTS	Crown Lubricant and Mfg. Co., 154 Botany Rd., Alexandria	89764	Premise Match	90m	South
DISINFECTANT MANUFACTURERS & SUPPLIERS	Crown Lubricant and Mnfg. Co., 154 Botany Rd., Alexandria	32935	Premise Match	90m	South
FLY SPRAY MANUFACTURERS	Crown Lubricants Mfrg. Co., 154 Botany Rd., Alexandria	46422	Premise Match	90m	South
MOTOR OIL & GREASE MANUFACTURERS	Crown Lubricants Mnfg. Co., 154 Botany Rd., Alexandria	84631	Premise Match	90m	South
MIXED BUSINESSES & GENERAL STORES	Hirst, W., 23 Buckland St., Alexandria	80188	Premise Match	90m	South West

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
GROCERS-RETAIL	Hurst, W. H., 23 Buckland St., Alexandria	57841	Premise Match	90m	South West
MOTOR SERVICE STATIONS-PETROL, Etc.	Central Service Station, 11 Henderson Rd., Alexandria	85861	Premise Match	92m	North West
MOTOR GARAGES &/OR ENGINEERS	Central Service Station, 11 Henderson Rd., Alexandria	83569	Premise Match	92m	North West
CARRIERS 4 CARTAGE CONTRACTORS (MASTER)	Mayman, W. M. Transport Co., 11 Henderson Rd., Alexandria	20419	Premise Match	92m	North West
CARRIERS & CARTAGE CONTRACTORS	Mayman, W. M. Transport Co., 11 Henderson Rd., Alexandria	19326	Premise Match	92m	North West
FOOTWEAR-RETAILERS	Kacen, J. (Children's Shoes), 38 Botany Rd., Alexandria	47368	Premise Match	94m	North West
HOTELS-LICENSED	Boundary Hotel, Wyndham St., Alexandria	62926	Road Match	94m	South
CARRIERS & CARTAGE CONTRACTORS (MASTER)	Edwards, R. H., Wyndham St., Alexandria	20173	Road Match	94m	South
VALVES (STEAM, WATER, Etc.) MFRS. &/OR DISTRIBUTORS	Victor Motor Co. Ltd., Wyndham St., Alexandria	111810	Road Match	94m	South
HAIRDRESSERS (GENT.'S) &/OR TOBACCONISTS	Strachan, H. Chas., 25 Botany Rd., Waterloo	60051	Premise Match	96m	North
FURNITURE MANUFACTURERS & WHOLESALERS-GENERAL	Lee, A. P. and Son, 156 Botany Rd., Alexandria	52799	Premise Match	96m	South
CABINETMAKERS	Lee, A., 156 Botany Rd., Alexandria	14922	Premise Match	96m	South
PAWNBROKERS & MONEYLENDERS	Alexandria Monte de Piete, 36 Botany Rd., Alexandria	91376	Premise Match	99m	North West
PAWNBROKERS & MONEYLENDERS	Franklin, P., 36 Botany Rd., Alexandria	91395	Premise Match	99m	North West
CAKE & PASTRYCOOKS-WHOLESALE	Nash, A., 23 Botany Rd., Waterloo	16223	Premise Match	102m	North
CAKE SHOPS & PASTRYCOOKS	Nash, A., 23 Botany Rd., Waterloo	17030	Premise Match	102m	North
MOTOR ACCESSORIES-DEALER	Central Service Station (Alexandria) Pty. Ltd., Cnr. Wyndham St. and Henderson Rd., Alexandria	81533	Road Intersection	103m	North West
WINE SALOONS	Bennett, F. J, 34 Botany Rd., Alexandria	113716	Premise Match	105m	North West
WEAVERS	Rex Weaving Mill Pty. Ltd. (Rayons, Woollens, Cottons), Mill, 158 Botany Rd.,	112566	Premise Match	107m	South
CARRIERS & CARTAGE CONTRACTORS	Behn, L. M., 4 Wyndham St., Alexandria	18394	Premise Match	108m	North West
HARDWARE DEALERS &/OR IRONMONGERS	Carr, G. H., 32 Botany Rd., Alexandria	60919	Premise Match	110m	North West
MIXED BUSINESSES & GENERAL STORES	Connors, H., Phillip St., Redfern	79651	Road Match	112m	East
CHEMICAL MANUFACTURERS	Corbett, W. H., Phillips St., Redfern	21022	Road Match	112m	East
FURNITURE MANUFACTURERS & WHOLESALERS-GENERAL	Maguire, C. R. and Co., Phillip St., Waterloo	52816	Road Match	112m	East
DEPARTMENTAL STORES	Haslams Pty. Ltd., 13-21 Botany Rd., Waterloo	32487	Premise Match	112m	North
DRAPERS-RETAIL	Haslams Pty. Ltd., 13-21 Botany Rd., Waterloo	33711	Premise Match	112m	North
SIGNWRITERS	Summers, E., 143-139 Botany Rd., Waterloo	102653	Premise Match	115m	South
WELDERS-ELECTRIC &/OR OXY	Summers, E., 143-159 Botany Rd., Waterloo	113100	Premise Match	115m	South
MOTOR PAINTERS	Summers, E., 143-159 Botany Rd., Waterloo	85051	Premise Match	115m	South
MOTOR PANEL BEATERS	Summers, E., 143-159 Botany Rd., Waterloo	85532	Premise Match	115m	South
COACH & HORSE DRAWN VEHICLE BUILDERS	Summers, E., 143-159 Botany Rd., Waterloo	25499	Premise Match	115m	South
BLACKSMITHS	Summers, E., 143-159 Botany Rd., Waterloo	8371	Premise Match	115m	South
MOTOR BODY BUILDERS	Summers, E., 143-159 Botany Rd., Waterloo	82197	Premise Match	115m	South
DELICATESSENS & SMALLGOODS DEALERS	Jenkins, W. M., 28 Botany Rd., Alexandria	30690	Premise Match	117m	North West
CABINETMAKERS	Hafoma Cabinet Co. Pty. Ltd., 15-19 Botany St., Waterloo	14908	Premise Match	124m	North
KITCHEN UNIT & CABINET MANUFACTURERS	Hafoma Cabinet Co., 15-19 Botany St., Waterloo	66899	Premise Match	124m	North
GROCERS-RETAIL	Tierney, P., 18 Henderson Rd., Alexandria	55924	Premise Match	124m	West

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
ENGINEERS-STEAM	Carmichael, C. and Son, 83 Wyndham St., Alexandria	42353	Premise Match	127m	West
BOILERMAKERS	Carmichael, L. C. and Son, 83 Wyndham St, Alexandria	9056	Premise Match	127m	West
FOOTWEAR-RETAILERS	Glass Shoes, 24 Botany Rd., Alexandria	47288	Premise Match	128m	North West
ENGINEERS-PRECISION	Jardyne, J. Pty. Ltd, 28 Wyndham St, Alexandria	41869	Premise Match	128m	North West
ENGINEERS-GENERAL &/OR MANUFACTURING &/OR MECHANICAL	Jardyne, J. Pty. Ltd., 28 Wyndham St, Alexandria	40877	Premise Match	128m	North West
DIE & PRESS TOOL MAKERS	Jardyne, J. Pty. Ltd., 28 Wyndham St., Alexandria	32710	Premise Match	128m	North West
CAN MAKING MACHINERY MANUFACTURERS	Jardyne, J. Pty. Ltd., 28 Wyndham St., Alexandria	17456	Premise Match	128m	North West
TOOL MAKERS	Jardyne, J. Pty. Ltd., 28 Wyndham St., Alexandria	109147	Premise Match	128m	North West
SHEET METAL WORKERS' MACHINERY MFRS. & MERCHANTS	Jardyne, J. Pty. Ltd., 28 Wyndham St., Alexandria	101869	Premise Match	128m	North West
HEALTH CENTRES & CLINICS	Baby Health Centre, 20 Henderson Rd., Alexandria	61923	Premise Match	130m	West
BUTCHERS-RETAIL	Caldwell, S. E., 9 Botany Rd., Waterloo	13231	Premise Match	132m	North
FURNISHINGS-SOFT-RETAILERS	Mason, H. L. and Son Pty. Ltd., 14-16 Botany St., Waterloo	52346	Premise Match	132m	North
PICTURE THEATRE EQUIPMENT & SUPPLIES	Mason, H. L. and Son Pty. Ltd., 14-16 Botany St., Waterloo	92645	Premise Match	132m	North
FURNITURE MANUFACTURERS & WHOLESALERS-GENERAL	Mason, H. L. and Son Pty. Ltd., 16 Botany St., Waterloo	52823	Premise Match	132m	North
FURNISHINGS-SOFT-MANUFACTURERS &/OR WHOLESALERS	Mason, H. L. and Sons Pty. Ltd., 14-16 Botany St., Waterloo	52192	Premise Match	132m	North
CARRIERS & CARTAGE CONTRACTORS	Burns, J., 22 Henderson Rd., Alexandria	18507	Premise Match	136m	West
FURNITURE MANUFACTURERS & WHOLESALERS-GENERAL	Kafka, P. E., 161 Botany Rd., Waterloo	52780	Premise Match	144m	South
FURNITURE MANUFACTURERS & WHOLESALERS-GENERAL	Kafka, P. E., 161 Botany Rd., Waterloo	52781	Premise Match	144m	South
STEEL TREATMENT SPECIALISTS	Barron, W. N., 22 Wyndham St., Alexandria	105308	Premise Match	145m	North West
HOTELS-LICENSED	Bow-Bells Hotel, 20 Botany Rd., Alexandria	62929	Premise Match	145m	North West
SCHOOLS & COLLEGES-GENERAL	Waterloo Tanning School, Botany St., Waterloo	100931	Premise Match	147m	South
FURNITURE MANUFACTURERS & WHOLESALERS-GENERAL	Seymour, F. B., 11 Botany St., Waterloo	52916	Premise Match	150m	North
FURNITURE MANUFACTURERS-OCCASIONAL	Seymour, F., 11 Botany St., Waterloo	53063	Premise Match	150m	North

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1950 Business Directory Drycleaners & Service Stations

Drycleaners, Motor Garages & Service Stations from the 1950 UBD Business Directory within 1km of the site:

Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
MOTOR GARAGES &/OR ENGINEERS	Feneck, J., 101 Botany Rd., Waterloo	83739	Premise Match	0m	Onsite
DRY CLEANERS, PRESSERS & DYERS	Normays Dry Cleaners, 90 Botany Rd., Alexandria	35566	Premise Match	36m	West
MOTOR GARAGES &/OR ENGINEERS	Skinner, F. L. and Sons. 102 Botany Rd., Alexandria	84374	Premise Match	38m	South West
MOTOR SERVICE STATIONS-PETROL, Etc.	Central Service Station, 11 Henderson Rd., Alexandria	85861	Premise Match	92m	North West
MOTOR GARAGES &/OR ENGINEERS	Central Service Station, 11 Henderson Rd., Alexandria	83569	Premise Match	92m	North West
MOTOR GARAGES &/OR ENGINEERS	Hawxwell and Jones Pty. Ltd., 163 Botany Rd., Waterloo	83855	Premise Match	154m	South
MOTOR SERVICE STATIONS-PETROL, Etc.	Hawxwell and Jones Pty. Ltd., 163 Botany Rd., Waterloo	86049	Premise Match	154m	South
DRY CLEANERS, PRESSERS & DYERS	Anderson Bros. Pty. Ltd. 199 Regent St., Redfern	35078	Premise Match	177m	North
MOTOR GARAGES &/OR ENGINEERS	McKenzie and Adams, Garden St. and Henderson Rd., Alexandria	84066	Road Intersection	185m	West
MOTOR SERVICE STATIONS-PETROL, Etc.	Whittingham, A., 40 Henderson Rd., Alexandria	86526	Premise Match	202m	West
DRY CLEANERS, PRESSERS & DYERS	Tasman Dry Cleaners. 195 Regent St. Redfern	35772	Premise Match	213m	North
MOTOR GARAGES &/OR ENGINEERS	Dalton Motor Garage, 150 Regent St., Redfern	83657	Premise Match	232m	North
MOTOR GARAGES &/OR ENGINEERS	Dalton Motor Garage, 150 Regent St., Redfern	83658	Premise Match	232m	North
MOTOR SERVICE STATIONS-PETROL, Etc.	Super Service Station, 173 Botany Rd., Waterloo	86443	Premise Match	249m	South
DRY CLEANERS, PRESSERS & DYERS	Jones, Dry Cleaners Pty. Ltd. 147 Regent St., Redfern	35346	Premise Match	324m	North
MOTOR GARAGES &/OR ENGINEERS	H. & S. Auto Engineers, Cnr. Botany Rd. & O'Riordan Sts., Alexandria	83832	Suburb Match	354m	South
MOTOR SERVICE STATIONS-PETROL, Etc.	Jones, E. H., 131 Regent St., Redfern	86093	Premise Match	388m	North
MOTOR GARAGES &/OR ENGINEERS	Redfern Service Station (Williams and Eyers), 131 Regent St., Redfern	84264	Premise Match	388m	North
MOTOR SERVICE STATIONS-PETROL, Etc.	Redfern Service Station, 131 Regent St., Redfern	86323	Premise Match	388m	North
MOTOR SERVICE STATIONS-PETROL, Etc.	Red-Fern Service Station, 131 Regent St., Redfern	86324	Premise Match	388m	North
DRY CLEANERS, PRESSERS & DYERS	Redfern Dry Cleaners, 74 Regent St., Redfern	35634	Premise Match	447m	North
DRY CLEANERS, PRESSERS & DYERS	Tasman Dry Cleaners. Renwick St., Redfern	35775	Road Match	492m	North
DRY CLEANERS, PRESSERS & DYERS	Tasman Dry Cleaners. 38 Mitchell Rd., Alexandria	35754	Premise Match	512m	South West
DRY CLEANERS, PRESSERS & DYERS	Tasman Dry Cleaners. 170 Redfern St., Redfern	35747	Premise Match	513m	North
MOTOR SERVICE STATIONS-PETROL, Etc.	Moir, J., 15 Dadley St., Alexandria	86216	Premise Match	557m	West
DRY CLEANERS, PRESSERS & DYERS	Anderson Bros. Pty. Ltd. 46 Regent St., Redfern	35075	Premise Match	571m	North
MOTOR GARAGES &/OR ENGINEERS	Redfern Motor Garage, 76 Lawson Sq., Redfern	84263	Premise Match	578m	North
MOTOR SERVICE STATIONS-PETROL, Etc.	Redfern Motor Garage, 76 Lawson Sq., Redfern	86322	Premise Match	578m	North
DRY CLEANERS, PRESSERS & DYERS	Sunshine Hand Laundry and Dry Cleaner, 88 Pitt St., Redfern	35719	Premise Match	581m	North East
MOTOR SERVICE STATIONS-PETROL, Etc.	Adams, Williams and Co. Ltd., Fountain St., Alexandria	85737	Road Match	600m	South West
DRY CLEANERS, PRESSERS & DYERS	Sharpe Bros., 286-288 Botany Rd., Alexandria	35685	Premise Match	613m	South
MOTOR GARAGES &/OR ENGINEERS	Scholtz, E. N., 231 Elizabeth St., Redfern	84347	Road Match	630m	East
MOTOR SERVICE STATIONS-PETROL, Etc.	Buckle Motors Trading Co. Pty. Ltd., 74-76 George St., Redfern	85831	Premise Match	634m	North
DRY CLEANERS, PRESSERS & DYERS	Jones, Dry Cleaners Pty. Ltd. 90 Redfern St., Redfern	35343	Premise Match	638m	North East

Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
DRY CLEANERS, PRESSERS & DYERS	Immaculate Dry Cleaners, Redfern St. Redfern	35300	Road Match	642m	North East
DRY CLEANING MACHINERY & SUPPLIES MFRS. &/OR DISTRIBUTORS	Beaton M. G. and Co., 78 Mitchell Rd., Alexandria	35841	Premise Match	677m	South West
DRY CLEANING MACHINERY & SUPPLIES MFRS. &/OR DISTRIBUTORS	Abel Lemon and Co. Pty. Ltd., 193 Elizabeth St., Waterloo	35839	Premise Match	678m	South East
DRY CLEANERS, PRESSERS & DYERS	Ashton Dry Cleaners, 135 Abercrombie St., Redfern	35087	Premise Match	682m	North West
DRY CLEANERS, PRESSERS & DYERS	Burton, W., 88 Mitchell Rd., Alexandria	35146	Premise Match	703m	South West
MOTOR GARAGES &/OR ENGINEERS	Town Auto Repairs, 4 Renwick St., Redfern	84476	Premise Match	722m	North
MOTOR GARAGES &/OR ENGINEERS	Five Ways Service Station, Cnr. Botany Rd. and O'Riordan St., Alexandria	83747	Road Intersection	794m	South
MOTOR SERVICE STATIONS-PETROL, Etc.	Green Square Filling Station, Cnr. Bourke Rd. and O'Riordan St., Alexandria	86010	Road Intersection	794m	South
MOTOR GARAGES &/OR ENGINEERS	H. and S. Auto Engineering, Cnr. Botany Rd. and O'Riordan St., Alexandria	83833	Road Intersection	794m	South
MOTOR SERVICE STATIONS-PETROL, Etc.	H. and S. Auto Engineers, Cnr. Botany Rd. and O'Riordan St., Alexandria	86026	Road Intersection	794m	South
MOTOR SERVICE STATIONS-PETROL, Etc.	Evans, W. (B.A.P. Service Station), 19 Regent St., Redfern	85944	Premise Match	801m	North
MOTOR SERVICE STATIONS-PETROL, Etc.	Snelgrove, F. C., Green Sq., Alexandria	86402	Road Match	819m	South
MOTOR GARAGES &/OR ENGINEERS	Albania Motor Repair Coy., 17 Pitt St., Redfern	83362	Premise Match	831m	North East
MOTOR SERVICE STATIONS-PETROL, Etc.	Five Ways Service Station, 312 Botany Rd., Alexandria	85961	Premise Match	844m	South
MOTOR GARAGES &/OR ENGINEERS	Federal Motor Service Station, 1 Regent St., Redfern	83737	Premise Match	847m	North
MOTOR SERVICE STATIONS-PETROL, Etc.	Federal Motors Service Station, 1 Regent St., Redfern	85953	Premise Match	847m	North
MOTOR GARAGES &/OR ENGINEERS	Cork, E. J., 3 O'Riordan St., Alexandria	83627	Premise Match	876m	South
MOTOR GARAGES &/OR ENGINEERS	Truck Repairs, Lawrence St., Alexandria	84482	Road Match	883m	South West
DRY CLEANERS, PRESSERS & DYERS	Mel-Wyn Dry Cleaners, 145 Cleveland St., Redfern	35523	Premise Match	920m	North
MOTOR GARAGES &/OR ENGINEERS	Ferguson, W. A. and Co., 120 Abercrombie St., Chippendale	83742	Premise Match	949m	North
MOTOR GARAGES &/OR ENGINEERS	Cleveland Garage, 77 Cleveland St., Redfern	83598	Premise Match	991m	North West

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

59-63 Botany Street - EI 2015a/ 2015b/ 2016

RAGLAN ST

RAGLAN ST

JERSON RD

BOTANY RD

COPE ST

COOPER ST

WYNDHAM LN

WELLINGTON ST

MW04

BH102M

TP08

BH105

BH107M

MW03

TP09

TP10

MW05

TP11

BH01

TP12

BH02

TP13

MW06

Historical motor garage and service station

Smash repairs

Half basement beneath units

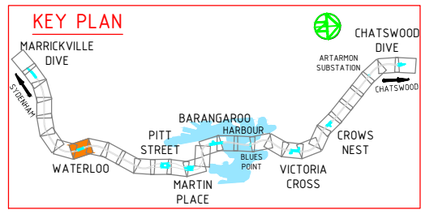
Laundry/ Dry cleaner

Special waste- asbestos-general solid waste

Full basement beneath boat supplies shop

Automotive centre

KEY PLAN



LEGEND:

- WORKSITE AREA
- EXCAVATION AREA
- 1.2-1.5m PILING ZONE

LEGEND

- Test pit location
- Soil bore location
- Groundwater monitoring well location
- Boreholes from IE (2015a)

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT: John Holland CPB Ghella JV		TITLE: **Test Locations, Sydney Metro City & South West, Tunnel and Station Works Package, Proposed Waterloo Dive, Botany Road and Cope Street, WATERLOO**
OFFICE: Sydney	DRAWN BY: PSCH	
SCALE: 1:2000 @ A3	DATE: 10.10.2017	

PROJECT No: 85608.14
DRAWING No: 2
REVISION: 0

59-63 Botany Street - EI 2015a/ 2015b/ 2016 -further waste classification required

RAGLAN ST

RAGLAN ST

JERSON RD

BOTANY RD

COPE ST

COOPER ST

WYNDHAM LN

WELLINGTON ST

MW04

BH102M

TP08

BH105

BH107M

MW03

TP09

TP10

MW05

TP11

BH01

TP12

BH02

TP13

MW06

Historical motor garage and service station

Smash repairs

Half basement beneath units

Laundry/ Dry cleaner

Probable extent of special waste- asbestos-general solid waste

Area of provisional Restricted solid waste- Special waste-Asbestos

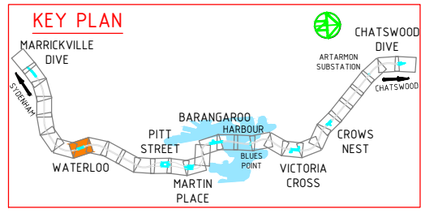
Full basement beneath boat supplies shop

Probable extent of general solid waste

MW06- further waste classification required

Automotive centre

KEY PLAN



LEGEND:

- WORKSITE AREA
- EXCAVATION AREA
- 1.2-1.5m PILING ZONE

LEGEND

- Test pit location
- Soil bore location
- Groundwater monitoring well location
- Boreholes from IE (2015a)

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT: John Holland CPB Ghella JV		
OFFICE: Sydney	DRAWN BY: PSCH	
SCALE: 1:2000 @ A3	DATE: 12.4.2018	

TITLE: **Filling Waste Classification, Sydney Metro City & South West, Tunnel and Station Works Package, Proposed Waterloo Dive, Botany Road and Cope Street, WATERLOO**

N

PROJECT No:	85608.14
DRAWING No:	3
REVISION:	2

APPENDIX C

Hazardous Chemicals Search

Ref No. SM-18-00182541

19 October 2018

Hazardous Chemicals Search
Licensing
SafeWork NSW
Locked Bag 2906
Lisarow NSW 2252

Dear Sir/Madam

AUTHORISATION FOR SITE SEARCH FOR LICENSE TO KEEP HAZARDOUS CHEMICALS

Please accept this letter as written authorization for Golder Associates Pty Ltd to perform a Hazardous Chemicals Search on behalf of Sydney Metro for the following property:

Address	Folio Information
49-67 Botany Road, Waterloo	Lot 1 DP 436831
49-67 Botany Road, Waterloo	Lot 1 DP 205942
49-67 Botany Road, Waterloo	Lot 2 DP 205942
49-67 Botany Road, Waterloo	Lot A DP 408116
49-67 Botany Road, Waterloo	Lot 32 DP 805384
49-67 Botany Road, Waterloo	Lot 31 DP 805384
49-67 Botany Road, Waterloo	Lot 1 DP 433969
49-67 Botany Road, Waterloo	Lot 1 DP 738891
49-67 Botany Road, Waterloo	Lot A DP 108312
49-67 Botany Road, Waterloo	Lot B DP 108312
49-67 Botany Road, Waterloo	Lot C DP 108312
49-67 Botany Road, Waterloo	Lot D DP 108312
49-67 Botany Road, Waterloo	Lot E DP 108312
49-67 Botany Road, Waterloo	Lot 1 DP 996765
49-67 Botany Road, Waterloo	Lot 1 DP 27454
49-67 Botany Road, Waterloo	Lot 2 DP 27454
49-67 Botany Road, Waterloo	Lot 12 DP 399757
49-67 Botany Road, Waterloo	Lot 1 DP 228641
49-67 Botany Road, Waterloo	2 DP 228641
49-67 Botany Road, Waterloo	Lot 1 DP 814205
49-67 Botany Road, Waterloo	Lot 4 DP 215751
49-67 Botany Road, Waterloo	Lot 5 DP 215751
69-83 Botany Road, Waterloo	SP 75492 – Lots 1 to 18 and CP/ SP 75492

If you require further information do not hesitate to contact Barry Houston of Golder Associates on 02 9478 3900.

Yours sincerely

C. Cavendish

Charles Cavendish
Senior Asset Manager, Property
Sydney Metro

NSW GOVERNMENT | SafeWork NSW

Locked Bag 2906, Lisarow NSW 2252
Customer Experience 13 10 50
ABN 81 913 830 179 | www.safework.nsw.gov.au

Our Ref: D18/215725

1 November 2018

Golder Associates Pty Ltd
Barry Houston
124 pacific Hwy
Greenwich NSW 2065

Dear Mr Houston

RE SITE: 49-67 and 69-83 Botany Rd Waterloo NSW

I refer to your site search request received by SafeWork NSW on 27 August 2018 requesting information on Storage of Hazardous Chemicals for the above site.

Enclosed are copies of the documents that SafeWork NSW holds on record number NDG004612 and 35/036394 relating to the storage of Hazardous Chemicals at the above-mentioned premises.

For further information or if you have any questions, please call us on 13 10 50 or email licensing@safework.nsw.gov.au

Yours sincerely

Customer Service Officer
Customer Experience - Operations
SafeWork NSW

Application for Licence to Keep Dangerous Goods

DG1

Application for: New Licence ☑ Amendment ☐ Transfer ☐ Renewal of expired licence ☐

PART A - *Applicant and site information* (See page 2 of Guidance Notes)

1 Name of applicant: R.W. BASHAM PTY. LTD. ACN: 000 134 467

2 Postal Address of Applicant: P.O. Box 510 Suburb/Town: Alexandria Postcode: NSW 1435

3 Trading Name or Site Occupier's Name: R.W. BASHAM PTY. LTD.

4 Contact for Licence Inquiries
Phone: (02) 9319 6027 Fax: (02) 9319 5157 Name: Craig Basham

5 Previous Licence Number (if known): 35/ N/A

6 Previous Occupier (if known): N/A

7 Site to be Licensed (Please include photocopy page from a local Street Directory with the site marked X)
No Street: 146 COPE ST WATERLOO NSW 2017

8 Main Business of Site: MARINE PRODUCTS WHOLESALER

9 Site staffing: Hours per day: 10 Days per week: 5

10 Site Emergency Contact
Phone: (02) 9970 5827 Name: Craig Basham

11 Major Supplier of Dangerous Goods: Pains - Wessex Australia Pty. Ltd.

12 If a new site or for amendments to depots - see page 4 of Guidance Notes.
Plans Stamped by: Signature of Competent Person Printed Name Date stamped

I certify that the details in this application (including any accompanying computer disk) are correct and cover all licensable quantities of dangerous goods kept on the premises.

13 Signature of Applicant Printed Name: Craig Basham

Please send your application marked Confidential, to: **Dangerous Goods Licensing, WorkCover NSW, Locked Bag 2906, LISAROW NSW 2252**

Hotline: (02) 4321 5500 Fax: (02) 9287 5500



WorkCover NSW ABN 77 682 742 966 92-100 Donnison Street Gosford NSW 2250 Locked Bag 2906 Lisarow NSW 2252
Telephone 02 4321 5000 Facsimile 02 4325 4145 WorkCover Assistance Service 13 10 50
DX 13067 Website www.workcover.nsw.gov.au

WC1216LH

page 5 of the Guidance Notes

rous Goods Storage Complete one section per depot

ore depots than that space provided, photocopy sufficient sheets first

ot mber	Type of Depot (see page 5)	Depot Class	Maximum Storage Capacity
DG 1	INTERNAL MAGAZINE	1.3G	45 KG

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	Typical Quantity	Unit eg L, kg, m^3
0197	Signals, Smoke	1.4G		Orange Handsmoke	60	Units
				Aurora		
0191	Signal Device, Hand	1.4G		Red Handflare	60	units
				Aurora		
0195	Parachute Rocket	1.3G		Red Para Rocket	12	Units
	Red MK3			MK3		
0191	Signal Device, Hand	1.4G		White Handflare	4	Units
				Aurora		

page 5 of the Guidance Notes

- Dangerous Goods Storage Complete one section per depot

depots than that space provided, photocopy sufficient sheets first

Depot Number	Type of Depot (see page 5)	Depot Class	Maximum Storage Capacity
G1	Internal Magazine	1	

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	Typical Quantity	Unit eg L, kg, m^3
0197	Signals, Smoke	1.4G		Orange Handsmoke	60	Units
0191	Signal Device, Hand	1.4G		Red Handflare	60	Units
0195	Parachute Rocket	1.3G		Red Para Rocket	12	Units
0191	Signal Device, Hand	1.4G		White Handflare	4	units

Depot Number	Type of Depot (see page 5)	Depot Class	Maximum Storage Capacity

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	Typical Quantity	Unit eg L, kg, m^3

Depot Number	Type of Depot (see page 5)	Depot Class	Maximum Storage Capacity

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	Typical Quantity	Unit eg L, kg, m^3

Depot Number	Type of Depot (see page 5)	Depot Class	Maximum Storage Capacity

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	Typical Quantity	Unit eg L, kg, m^3

ATF. with Renewals without changes

WorkCover New South Wales, 400 Kent Street, Sydney 2000. Telephone 9370 5000 ALL MAIL TO G.P.O. BOX 5364 SYDNEY 2001

Licence No. 35/004612

APPLICATION FOR RENEWAL
OF LICENCE TO KEEP DANGEROUS GOODS

WORKCOVER NEW SOUTH WALES

ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOODS ACT, 1975 AND REGULATION THEREUNDER

DECLARATION: Please renew licence number 35/004612 to 20/09/2000 . I confirm that all the licence details shown below are correct (amend if necessary).

..... NABIL MAGAR 16/11/99

(Signature) *(Please print name)* *(Date signed)*

for: RYLEDAR P/L

*THIS **SIGNED** DECLARATION SHOULD BE **RETURNED TO:***

WorkCover New South Wales
Dangerous Goods Licensing Section
GPO BOX 5364
SYDNEY 2001

Enquiries: ph (02) 9370 5187
fax (02) 9370 6105

Details of licence on 20 August 1999

Licence Number 35/004612 **Expiry Date** 20/09/1999

Licensee RYLEDAR P/L ACN 003 240 015

Postal Address: VOLUME PLUS BOX 494 P O VILLAWOOD NSW 2163

Licensee Contact BILL MAGAR Ph. 9727 8144 Fax. 9727 8343

Premises Licensed to Keep Dangerous Goods
RYLEDAR P/L
69-83 BOTANY RD WATERLOO 2017

Nature of Site AUTOMOTIVE FUEL RETAILING

Major Supplier of Dangerous Goods MOBIL

Emergency Contact for this Site BILL MAGAR Ph. 9602 6490

Site staffing 24 HRS 7 DAYS

Scid noted & renewed 29.11.99 SN

Details of Depots

Depot No.	Depot Type	Goods Stored in Depot	Qty
1	**UNDERGROUND TANK**	**Class 3**	**33000 L**
	UN 1203 PETROL		33000 L
2	**UNDERGROUND TANK**	**Class 3**	**14700 L**
	UN 1203 PETROL		14000 L
3	**UNDERGROUND TANK**	**Class C1**	**10000 L**
	UN 00C1 DIESEL		9092 L
4	**UNDERGROUND TANK**	**Class 3**	**4600 L**
	UN 1203 PETROL		4500 L
5	**ABOVE-GROUND TANK**	**Class 2.1**	**7500 L**
	UN 1075 PETROLEUM GASES, LIQUEFIED		6800 L
6	**DECANTING CYLINDER(S)**	**Class 2.1**	**190 KG**
	UN 1075 PETROLEUM GASES, LIQUEFIED		150 KG

Form DG10

~~TAS~~ ATR

Application for Licence to Keep Dangerous Goods

WorkCover NEW SOUTH WALES

20/9/99 14690

Application for ☐ new licence ☑ amendment ☑ transfer ☑ renewal of expired licence

PART A – Applicant and site information

1 Name of applicant: RYLEDAR PTY LTD. ACN: 003 240 015.

2 Postal address of applicant: BOX 494 P.O. Suburb/Town: VILLAWOOD. Postcode: 2163

3 Trading name or site occupier's name: VOLUME PLUS. License Issued 23/10/98

4 Contact for licence inquiries
Phone: 9727 8144 Fax: 9727 8343. Name: BILL MAGAR

5 Previous licence number (if known): 35/ 004612.

6 Previous occupier (if known):

7 Site to be licensed
No: 69-83 Street: BOTANY ROAD.
Suburb / Town: WATERLOO Postcode: 2017

8 Main business of site: SERVICE STATION.

9 Site staffing: Hours per day: 24 Days per week: 7

10 Emergency contact
Phone: 96026490 Name: BILL MAGAR.

11 Major supplier of dangerous goods: MOBIL

12 If a new site or for amendments to depots
Plan stamped by: Name of Accredited Consultant: PHIL KOMM. Date stamped: 27.7.98

I certify that the details in this application (including any accompanying computer disk) are correct and cover all licensable quantities of dangerous goods kept on the premises.

13 Signature of applicant: [signature] Date: 27.7.98

Please send your application, marked *CONFIDENTIAL*, to:
Dangerous Goods Licensing, Level 3, Locked Bag 10, Clarence Street, SYDNEY NSW 2000

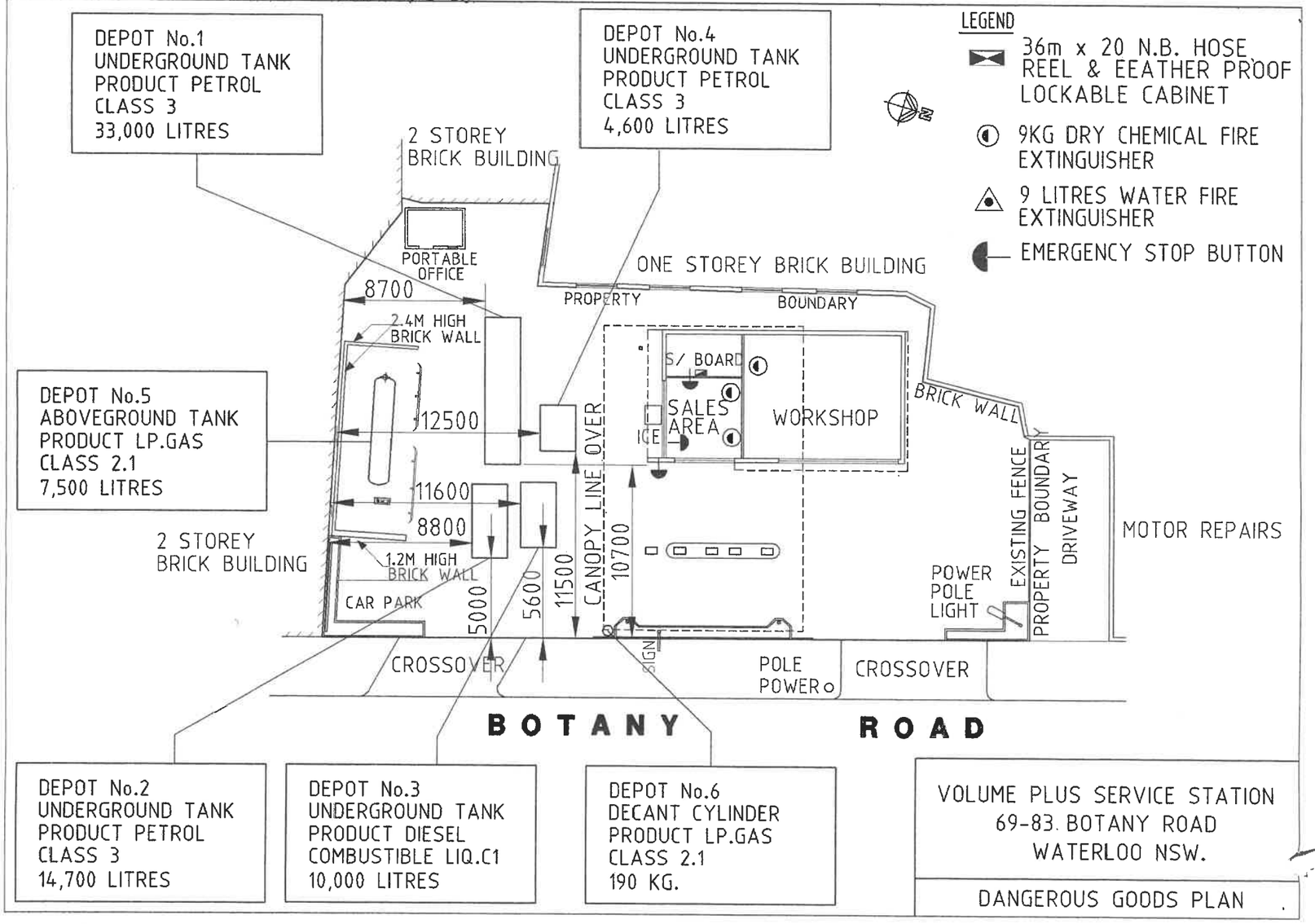
PTO

DATA ENTERED 23 OCT 1998

RECEIVED 31 AUG 1998 SCIENTIFIC SERVICES

35\004612

PART B



FEE REQUIRED.
Letter sent 18/2/88

m DGI

Department of Industrial Relations

DANGEROUS GOODS ACT, 1975

LICENCE No.
35 - 4612 - 2.

APPLICATION FOR LICENCE (or AMENDMENT or TRANSFER of LICENCE)* FOR THE KEEPING OF DANGEROUS GOODS

(* delete whichever is not required)

Endorsed [illegible]

FEE: $15.00 per Depot for new licence.
$15.00 for amendment or transfer.

421373 8/3/88 $15-00.

Name of Applicant in full (see Item 1 – Explanatory notes – page 4)	RONFIELD PTY LTD
Trading name or occupier's name (if any)	FILOTE PTY LTD trading as SYDNEY TAXI CENTRE. SERVICE STATION
Postal Address	69-83 BOTANY RD WATERLOO Postcode 2017
Address of the premises to be licensed. (Including Street No.)	69-83 BOTANY RD WATERLOO Postcode 2017
Nature of premises (See Item 2 – Explanatory notes – page 4)	SERVICE STATION
Telephone number of applicant	STD Code 02 Number 6985161

Particulars of type of depots and maximum quantities of dangerous goods to be kept at any one time.

Depot number	Type of depot (See item 3 – Explanatory notes – page 4)	Storage capacity	Dangerous goods: Product being stored	C & C Office use only
1	UNDERGROUND TANK	30,000	PETROL	
2	UNDERGROUND TANK	9,000	DIESEL Exempt	
3	ABOVE GROUND TANK	8,000	LPG	
4	GAS STORE	4000	LPG.	
5				
6				
7				
8				
9				
10				
11				
12				

Has site plan been approved by the Dangerous Goods Branch? YES (Yes) No — If yes, no plans required. If no, please attach site plan, or provide sketch plan overleaf.

Have premises previously been licensed? YES (Yes) No — If yes, state name of previous occupier, and licence No. (if known). MARC PETROL 35 [redacted] 0046122

Name of oil company supplying flammable liquid (if applicable). BP AUST. PETROL GAS

Signature of applicant ..... Date 21/1/88.

For external explosives magazine(s), please fill in page 3.

FOR OFFICE USE ONLY

CERTIFICATE OF INSPECTION

I, being an Inspector under the Dangerous Goods Act, 1975, do hereby certify that the premises described above do comply with the requirements of the Dangerous Goods Act, 1975, and the Dangerous Goods Regulation with regard to their situation and construction for the keeping of dangerous goods of the nature and in the quantity specified.

Signature of Inspector ..... Date .....

PA.

DANGEROUS GOODS ACT, 1975

DATA ENTERED DEC 1984 OPERATOR

LICENCE No. 35004612-2
DG 8406 — — — - 85

APPLICATION FOR LICENCE (or AMENDMENT or TRANSFER of LICENCE) FOR THE KEEPING OF DANGEROUS GOODS

VERIFIED 83

Application is hereby made for— *a licence (or amendment of the licence)
*the transfer of the licence
for the keeping of dangerous goods in or on the premises described below.

(*delete whichever is not required)

FEE: $10.00 per Depot for new licence.
$10.00 for amendment or transfer.

7

5936 20/12/84 03A

Name of Applicant in full (see over)	NF/MARC PETROL PTY. LTD.
Trading name or occupier's name (if any)	TF spacefill
Postal address	69-83 BOTANY RD WATERLOO Postcode 2017
Address of the premises including street number (if any)	Postcode
Nature of premises (see over)	SERVICE STATION.
Telephone number of applicant	STD Code Number 6985161

Particulars of type of depots and maximum quantities of dangerous goods to be kept at any one time.

Depot number	Type of depot (see over)	Storage capacity	Dangerous goods: Product being stored	C & C Office use only
				DD 002 020
1	UNDERGROUND	33000	PETROL	202034
2	-11-	9000	"	202093
3	"	9000	DIESEL EXEMPT	
4				
5				
6				
7				
8				
9				
10				
11				
12				

Has site plan been approved? YES — Yes / ~~No~~ — If yes, no plans required. If no, please attach site plan.

Have premises previously been licensed? — Yes / ~~No~~ — If yes, state name of previous occupier. TOTAH AUSTRALIA LTD.

Name of company supplying flammable liquid (if any) TOTAH

Signature of applicant ..... Date 7.12.84

For external explosives magazine(s), please fill in side 2.

FOR OFFICE USE ONLY

CERTIFICATE OF INSPECTION

I, C S DAVIES being an Inspector under the Dangerous Goods Act, 1975, do hereby certify that the premises described above do comply with the requirements of the Dangerous Goods Act, 1975, and the Dangerous Goods Regulation with regard to their situation and construction for the keeping of dangerous goods of the nature and in the quantity specified.

Signature of Inspector ..... C. Davies Date 22.1.85

APPLICATION FOR LICENCE (or AMENDMENT or TRANSFER of LICENCE) FOR THE KEEPING OF DANGEROUS GOODS

Application is hereby made for—*a licence (or amendment of the licence) *the transfer of the licence for the keeping of dangerous goods in or on the premises described below.

(*delete whichever is not required)

FEE: $10.00 per Depot

Amend s.Ken.

Name of Applicant in full (see over)	Surname PAPAGEORGE Given Names CON
Trading name or occupier's name (if any)	~~BP~~ TOTAL S/STN WATERLOO 2809 W/03/80 03A
Postal address	Postcode
Telephone number of applicant	STD Code Number
Address of the premises in or on which the depot or depots are situated (including street number, if any)	83 BOTANY Rd. WATERLOO Postcode 2017
Nature of premises (see over)	SERVICE STATION

~~PLEASE ATTACH SITE PLAN~~

Particulars of type of depots and maximum quantities of dangerous goods to be kept at any one time.

Depot number	Type of depot (see over)	Storage capacity LITRES	Dangerous goods: Product being stored	Dangerous goods: C & C Office use only
1	Underg. Tank	30000		
2	✓ ✓	15000		
3	✓ ✓	10000		
4	✓ ✓	5000		
5				
6				
7				
8				
9				
10				
11				
12				

INSPECTORS FIELD COLLECTION
RECEIPT No. 21447
DATE 12.12.79
AMOUNT 40.00
Chq.

Name of company supplying flammable liquid (if any) TOTAL

Have premises previously been licensed? YES

If known, state name of previous occupier AS ABOVE Licence No. 4612-6

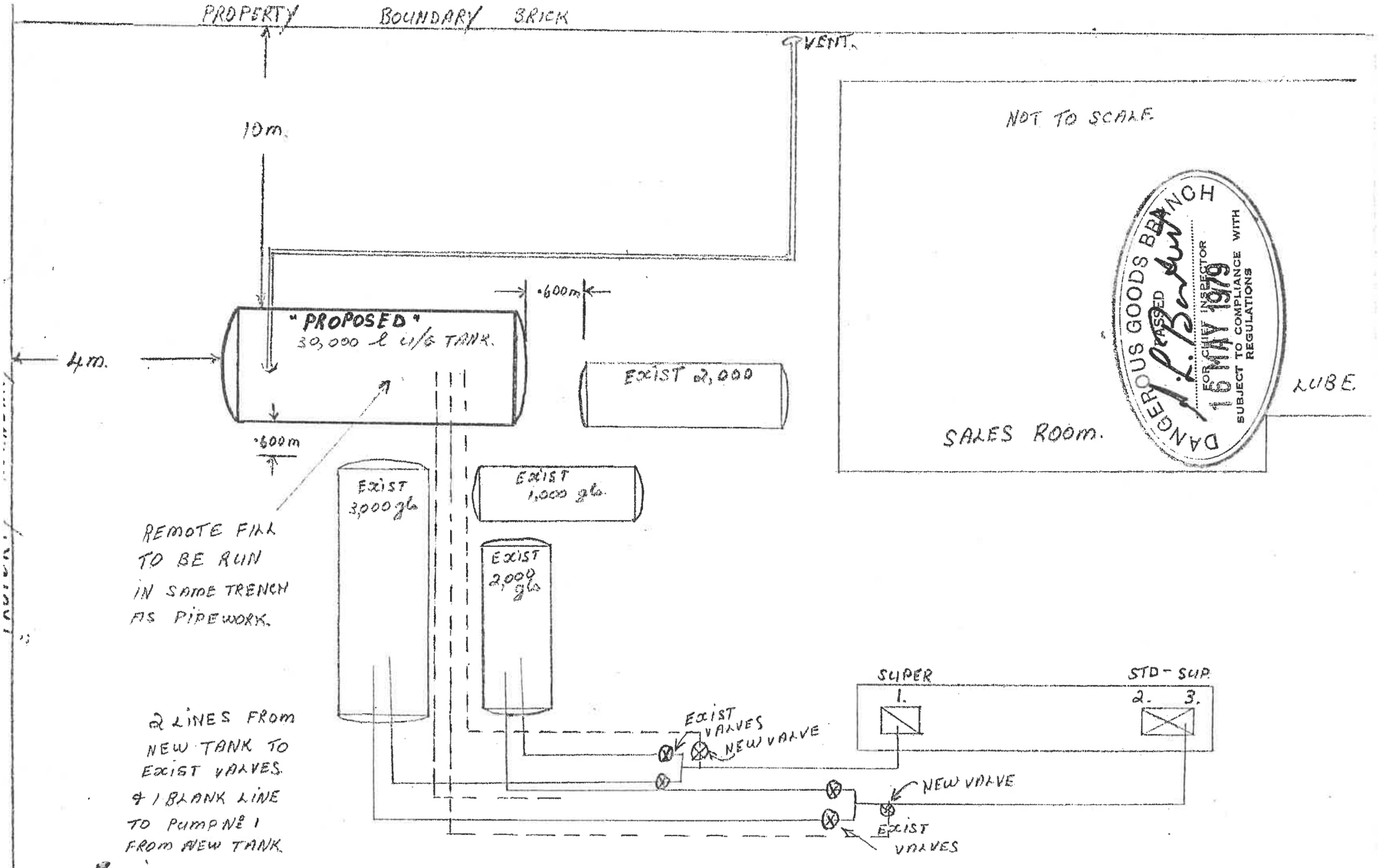
Signature of applicant C Papageorge Date 12.12.79

For external explosives magazine(s), please fill in side 2.

FOR OFFICE USE ONLY

CERTIFICATE OF INSPECTION

I, ADLY NOUR being an Inspector under the Dangerous Goods Act, 1975, do hereby certify that the premises described above do comply with the requirements of the Dangerous Goods Act, 1975, and the Dangerous Goods Regulation with regard to their situation and construction for the keeping of dangerous goods of the nature and in the quantity specified.



TOTAL. SERVICE STATION. 69 BOTANY. ROAD WATERLOO. 4612

INFLAMMABLE LIQUID ACT, 1915 (AS AMENDED)

Application for Registration of Premises or Store Licence under Division B or for the transfer alteration or amendment of any such Registration or Licence, for the keeping of Inflammable Liquid and/or Dangerous Goods, in accordance with the provisions of the Inflammable Liquid Act, 1915 (as amended), for the ensuing year.

(TOTAL)

DIRECTIONS

1. Applications must be forwarded to the Chief Inspector of Inflammable Liquid, Explosives Department, Box R.216, Royal Exchange Sydney, N.S.W. 2000 and must be accompanied by the prescribed fee, as set out hereunder:

Registration of Premises (Fee $3.00 p.a.) – For quantities not exceeding 300 gallons of mineral oil and 100 gallons of mineral spirit, if kept together; or 800 gallons of mineral oil and 100 gallons of mineral spirit, if kept in separate depots; or 500 gallons of mineral spirit, if kept in an underground tank depot; or 800 gallons of mineral oil and 500 gallons of mineral spirit, if mineral spirit is kept in an underground tank depot.

In addition to, or in lieu of the above, similar quantities of Dangerous Goods of Classes 1 and 2 may be kept under the like conditions; reading Dangerous Goods of Class 1 for the words Mineral Spirit and Dangerous Goods of Class 2 for the words Mineral Oil.

Store License, Div. A (Fee, $6.50 p.a.) – For quantities in excess of those stated above, but not exceeding 4,000 gallons mineral oil and/or mineral spirit, and/or Dangerous Goods of Classes 1, 2 and 9.

Store License, Div. B (Fee, See Regulation 7) – For quantities exceeding 4,000 gallons of mineral spirit, and/or dangerous goods of Classes 1 and 2, and/or dangerous goods of Class 3.

For the keeping of Dangerous Goods of Classes 3 and/or 4. ($15.00 p.a.).

Fees for the keeping of inflammable liquid and dangerous goods in excess of the above stated quantities and also for Liquid Petroleum Gas storage are set out in Regulation 7.

amend A4612 to 15/6/72

1. Name of occupier including full christian names.	EMMANUEL TSANGARAKIS
2. Trading Name (if any)	"TOTAL (WATERLOO) S/STN"
3. Locality of the premises in which the depot or depots are situated	No. or Name 69-83 Street BOTANY RD Town WATERLOO
4. Postal address	as above Postcode 2017
5. Occupation	S/Stn Prop.
6. Nature of premises (dwelling, garage etc.)	S/Stn.

6.

7. Particulars of construction of depots and maximum quantities of inflammable liquid and/or Dangerous Goods to be kept at any one time.

~~PLEASE ATTACH PLAN OF PREMISES~~

Depot No.	Construction of depots*			Inflammable liquid		Dangerous goods					
	Walls	Roof	Floor	Mineral spirit gallons	Mineral oil gallons	Class 1 gallons	Class 2 gallons	Class 3 lb	Class 4 cu ft	Class 5A water gal	Class 9 gallons
1	Underground Tank			3000							
2	—	—		2000							
3	—	—		1000							
4	Cylinders	2/100 lb								40	
5											
6											
7											
8											
9											
10											

PUBLIC REVENUE A/c.
EHQ $ 8.50
(Date) 20/1/72
Receipt No. 6613

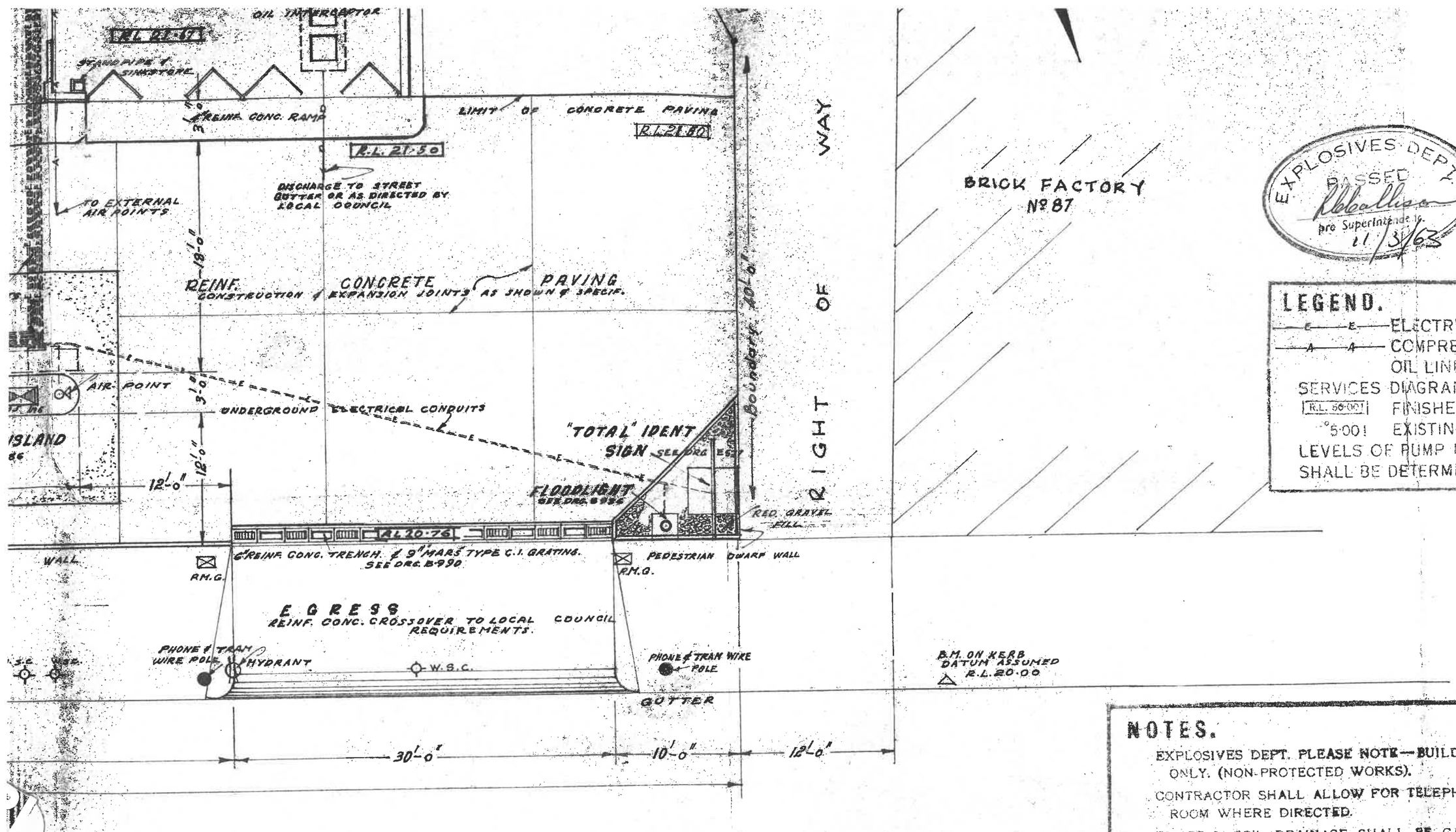
* If product is kept in tanks describe depots as underground or aboveground tanks.

Signature of applicant X [signature]

Date of application _____, 19__

CERTIFICATE OF INSPECTION

I, A. Leonard Bartlett being an Inspector under the Inflammable Liquid Act, 1915 (as amended), do hereby certify that the premises or store herein referred to and described is suit-



EXPLOSIVES DEPT. PASSED
pro Superintendent
11/3/63

Supersedes plan B1172.

LEGEND.

—E—E— ELECTRICAL CONDUIT.
—A—A— COMPRESSED AIR LINES.
OIL LINES.
SERVICES DIAGRAMMATIC ONLY.
R.L. 50·001 FINISHED LEVELS.
°5·001 EXISTING LEVELS.
LEVELS OF PUMP ISLAND APRONS. SHALL BE DETERMINED ON SITE.

NOTES.

EXPLOSIVES DEPT. PLEASE NOTE—BUILDING OCCUPIED BY LICENSE ONLY. (NON-PROTECTED WORKS).

CONTRACTOR SHALL ALLOW FOR TELEPHONE INSTALLATION IN SALE ROOM WHERE DIRECTED.

WASTE & SOIL DRAINAGE SHALL BE CARRIED OUT IN ACCORDANC WITH M.W.S. & D.B. REGULATIONS AND COUNCIL REQUIREMENTS.

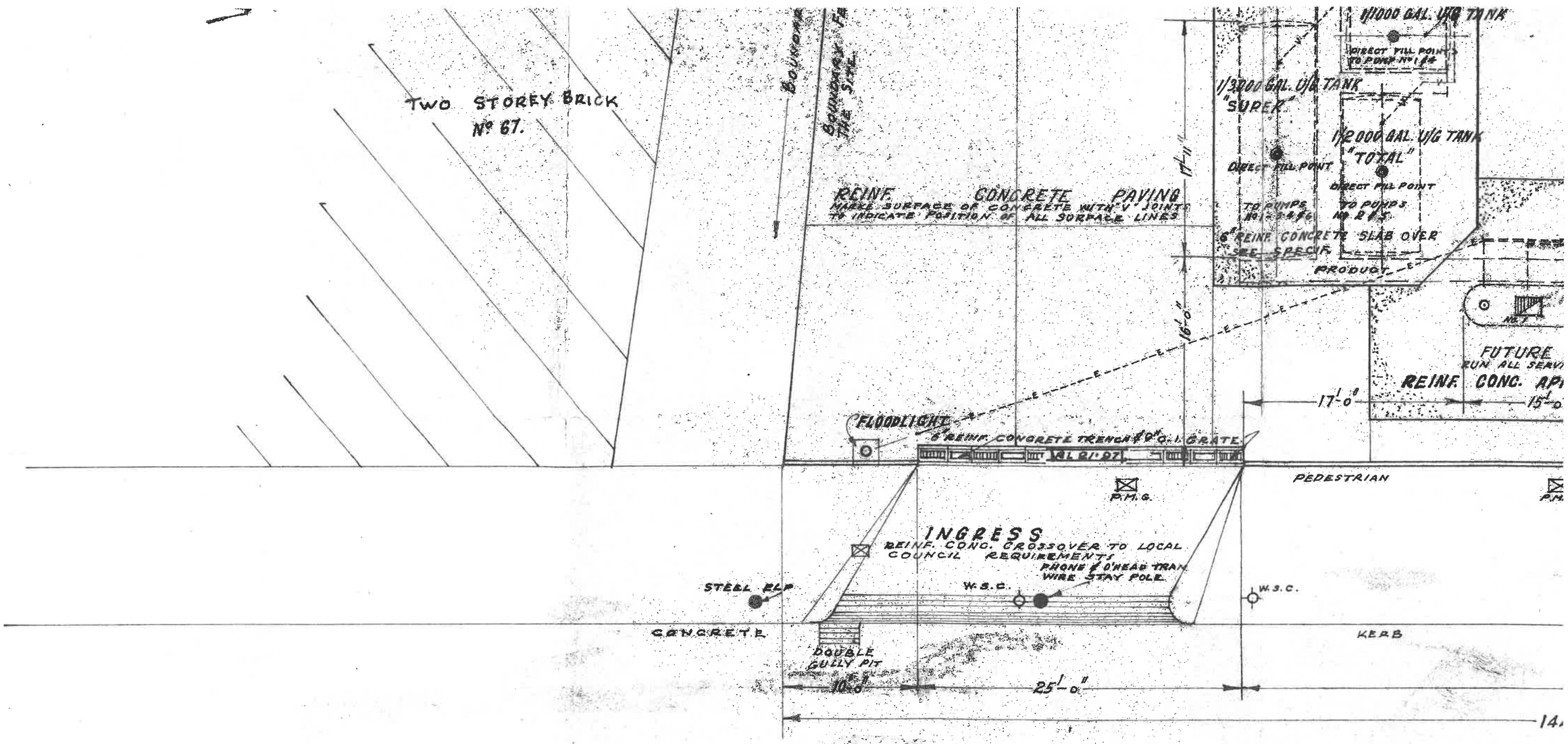
EXCAVATIONS FOR UNDERGROUND TANKS & PRODUCT LINE TRENCHI SHALL BE CARRIED OUT UNDER SEPARATE CONTRACT.

TOTAL OIL PRODUCTS (AUSTRALIA) PTY. LIMITED
ENGINEERING DEPT. - SYDNEY.

WATERLOO - BOTANY ROAD · SITE · SERVICE · PAVING · PLAN ·

SCALE	1/8" = 1'-0"	DRAWN	H.T.	B-1217 ·
		CHECKED		
DATE	10-1-63	APPR'VD.		

TOT


TWO STOREY BRICK
Nº 67.
BOUNDARY
BOUNDARY FE
THE SITE
1/1000 GAL. U/G TANK
DIRECT FILL POINT
TO PUMP Nº 1 & 4
1/3000 GAL. U/G TANK
"SUPER"
1/2000 GAL. U/G TANK
"TOTAL"
DIRECT FILL POINT
DIRECT FILL POINT
TO PUMPS
TO PUMPS
6" REINF. CONCRETE SLAB OVER
SEE SPECIF.
PRODUCT
REINF. CONCRETE PAVING
MARKE SURFACE OF CONCRETE WITH "V" JOINTS
TO INDICATE POSITION OF ALL SURFACE LINES
17'-11"
16'-0"
FUTURE
RUN ALL SERV
REINF. CONC. AP
17'-0"
15'-0
FLOODLIGHT
6" REINF. CONCRETE TRENCH & 9" C.I. GRATE
RL 21.97
PEDESTRIAN
P.M.G.
INGRESS
REINF. CONC. CROSSOVER TO LOCAL
COUNCIL REQUIREMENTS
PHONE & O'HEAD TRAN
WIRE STAY POLE
STEEL ELP
W.S.C.
W.S.C.
CONCRETE
KERB
DOUBLE
GULLY PIT
10'-0"
25'-0"
14

• BOTANY

APPENDIX D

Field Records

GROUNDWATER SAMPLING RECORD FORM
LOW FLOW PURGING and SAMPLING (incl. low yielding wells)

GOLDER

PROJECT INFORMATION			
WELL ID: GMW2A	Project Number: 1791865	Date: 28/10/18	
	Client: SMA	Sampled By: T.M	
	Site Location: WATERLOO	Time:	

Weather Conditions (Temperature, Precipitation, Wind): Cloudy, Windy

Well Maintenance Required? YES / (NO) Detail: Well located on side of church. Area very muddy.

WELL INFORMATION	
Diameter of standpipe (mm)	50 mm
Standpipe stick up (m)	1 m above ground level.
Surveyed reference point	
Depth to top of filter pack (from log)	
Depth to bottom of filter pack (from log)	
Depth of well (from log)	

mbRP - metres below top of reference point
Hose volume - 0.12 L/m of 1/2 inch diameter hose
Hose volume - 0.07 L/m of 3/8 inch diameter hose
Hose volume - 0.03 L/m of 1/4 inch diameter hose

GAUGING INFORMATION			
Pre-Sampling Information		*Purging and Sampling Information*	
Interface probe used?	YES / (NO)	Depth of pump intake (mbRP)	
Initial depth to water (mbRP)	4.33 mbTOP	Length of hose (m)	
Depth to product (mbRP)		Volume in hose (L)	
Thickness of product (m)		Depth to water after placement of pump (mbRP)	
Bailed product thickness (m)		Depth to water at end of purging (mbRP)	
Total depth of well (mbRP)		Depth to water after collection of samples (mbRP)	
Thickness of sediment on base of well (m)		Purging and Sampling Method	Peri-pump

Controller settings	
CPM	
Refill	
Discharge	
Throttle	

WQM Model: YSI PRO PLUS 10H100317

WQM Calibration Certificate: 26/10/2018 Airmet

GROUNDWATER MONITORING WELL PURGING RECORD

Time	Cumulative Volume Purged (L)	Flow Rate (L/min)	Depth to Water (mbRP)	±0.1 pH	±5% Conductivity (µS/cm)	±10 Redox (mV)	±10% Dissolved Oxygen (ppm)	±0.5°C Temperature (°C)	Appearance (Colour, Turbidity, Odour, etc)
12:38	0.25		4.33	6.67	334	104	1.34	18.7	Clear. Cloudy
12:36	0.5			6.54	332.6	104.6	1.29	18.7	
12:38	0.75		4.34	6.51	327.4	104.8	1.16	18.7	Clear. Slightly brown/orange.
12:40	1			6.43	332.8	104.1	1.14	18.6	" " " "
12:41	1.25		4.33	6.42	333.8	103.7	1.32	18.6	
12:42	1.5			6.42	332.8	102.7	1.36	18.6	" - -

SAMPLING RECORD

Time Sampled: 13:00
Colour: Clear
Odour: None
Turbidity: Low / Medium / High
Hydrocarbon Sheen ? Yes / No
DI Water Lab Certificate No.
Notes:

Sample IDs
Primary Duplicate: GMW2A
Secondary Duplicate: QCA200 / QCB300
Trip Blank:
Rinsate:
Field Blank:

Sample Containers/Preservation (F=Filtered; UF=Unfiltered; P=Preserved; UP=Unpreserved)

2 x 40 mL	Vials (P/UP)	1	Metals (F/UF;P/UP) 60 mL
1 x 0.5L	L Amber	1	Cyanide PFAS 250 mL Plastic
	1L Plastic	1	Sulphide 250 mL Plastic
	Phenols/COD/NH3 (F/UF; P/UP)	2	Other 60mL tubes
	Ferrous/Ferric Iron (F/UF; P/UP)	2	Other 60 mL Plastic

GROUNDWATER SAMPLING RECORD FORM
LOW FLOW PURGING and SAMPLING (Incl. low yielding wells)

GOLDER

PROJECT INFORMATION			
WELL ID: GMW1A	Project Number: 191865	Date: 28/10/18	
	Client: SMA	Sampled By: T.M	
	Site Location: WATERLOO	Time: 11:00	

Weather Conditions (Temperature, Precipitation, Wind): Cloudy, Windy

Well Maintenance Required? YES / (NO) Detail: Well located on northern side of Church

WELL INFORMATION	
Diameter of standpipe (mm)	50 mm
Standpipe stick up (m)	0.31 m above ground level
Surveyed reference point	
Depth to top of filter pack (from log)	
Depth to bottom of filter pack (from log)	
Depth of well (from log)	

mbRP - metres below top of reference point
Hose volume - 0.12 L/m of 1/2 inch diameter hose
Hose volume - 0.07 L/m of 3/8 inch diameter hose
Hose volume - 0.03 L/m of 1/4 inch diameter hose

GAUGING INFORMATION			
Pre-Sampling Information		*Purging and Sampling Information*	
Interface probe used?	(YES) / NO	Depth of pump intake (mbRP)	
Initial depth to water (mbRP)	3.96 mbTOP	Length of hose (m)	
Depth to product (mbRP)		Volume in hose (L)	
Thickness of product (m)		Depth to water after placement of pump (mbRP)	
Bailed product thickness (m)		Depth to water at end of purging (mbRP)	
Total depth of well (mbRP)		Depth to water after collection of samples (mbRP)	
Thickness of sediment on base of well (m)		Purging and Sampling Method	Peri-pump.

Controller settings	
CPM	
Refill	
Discharge	
Throttle	

WQM Model: YSI PRO PLUS 10H 100317

WQM Calibration Certificate: 26/10/18 Airmet ✓

GROUNDWATER MONITORING WELL PURGING RECORD

Time	Cumulative Volume Purged (L)	Flow Rate (L/min)	Depth to Water (mbRP)	±0.1 pH	±5% Conductivity (µS/cm)	±10 Redox (mV)	±10% Dissolved Oxygen (ppm)	±0.5°C Temperature (°C)	Appearance (Colour, Turbidity, Odour, etc)
11:15	0.25		4.02	6.90	1265	90.0	1.90	21.3	Medium turbidity / Brown / No Odour
11:17	0.5			6.75	1256	96	2.03	22.2	Same as above slightly more clear.
11:19	0.78		4.04	6.43	1237	100	1.88	22	
11:24	1		4.04	6.27	1229	105.1	1.48	22	Clear slightly brown/orange.
11:26	1.25		4.10	6.18	1225	104.4	1.61	21.8	" " " "
11:28	1.5		4.04	6.16	1214	103.8	1.56	21.5	" " " "

SAMPLING RECORD

Time Sampled: 11:30
Colour: Clear / Slightly brown
Odour: None
Turbidity: (Low) Medium High
Hydrocarbon Sheen ? Yes (No)
DI Water Lab Certificate No.:
Notes: Containers in total. Good recharge.

Sample IDs

Primary Duplicate:	GMW1A
Secondary Duplicate:	
Trip Blank:	
Rinsate:	
Field Blank:	

Sample Containers/Preservation (F=Filtered; UF=Unfiltered; P=Preserved; UP=Unpreserved)

2x40mL	Vials (P/UP)	1	Metals (F/UF;P/UP) 60mL
1x0.5	1L Amber	1	Cyanide PFAS 200mL Plastic
	1L Plastic		Sulphide 250mL Plastic
	Phenols/COD/NH3 (F/UF; P/UP)	2	Other 60mL Ambers
	Ferrous/Ferric Iron (F/UF; P/UP)	2	Other 2x60mL Plastic

GROUNDWATER SAMPLING RECORD FORM
LOW FLOW PURGING and SAMPLING (incl. low yielding wells)

GOLDER

PROJECT INFORMATION			
WELL ID: SRT-BH409	Project Number: 1791865	Date: 2/11/18	
	Client: SMA.	Sampled By: T.H	
	Site Location: WATERLOO	Time: 8:30	

Weather Conditions (Temperature, Precipitation, Wind): Sunny . 30°C

Well Maintenance Required? YES / (NO) Detail

WELL INFORMATION	
Diameter of standpipe (mm)	50m.
Standpipe stick up (m)	0.10 mbgl
Surveyed reference point	
Depth to top of filter pack (from log)	
Depth to bottom of filter pack (from log)	
Depth of well (from log)	

mbRP - metres below top of reference point
Hose volume - 0.12 L/m of 1/2 inch diameter hose
Hose volume - 0.07 L/m of 3/8 inch diameter hose
Hose volume - 0.03 L/m of 1/4 inch diameter hose

GAUGING INFORMATION			
Pre-Sampling Information	YES / NO	Purging and Sampling Information	
Interface probe used?		Depth of pump intake (mbRP)	
Initial depth to water (mbRP)	3.67 mbRP	Length of hose (m)	
Depth to product (mbRP)	3.77 mbgl NO PRODUCT	Volume in hose (L)	
Thickness of product (m)		Depth to water after placement of pump (mbRP)	
Bailed product thickness (m)		Depth to water at end of purging (mbRP)	
Total depth of well (mbRP)		Depth to water after collection of samples (mbRP)	
Thickness of sediment on base of well (m)		Purging and Sampling Method	

Controller settings	
CPM	
Refill	
Discharge	
Throttle	

WQM Model: YSI PRO PLUS 10D10144 3

WQM Calibration Certificate: 1/12/2018 Airmet.

GROUNDWATER MONITORING WELL PURGING RECORD

Time	Cumulative Volume Purged (L)	Flow Rate (L/min)	Depth to Water (mbRP)	±0.1 pH	±5% Conductivity (µS/cm)	±10 Redox (mV)	±10% Dissolved Oxygen (ppm)	±0.5°C Temperature (°C)	Appearance (Colour, Turbidity, Odour, etc)
8:30	0.2		3.68	6.86	410.6	123.5	0.25	22	Cloudy . white/grey no odour .
	0.4		3.68	6.61	412.3	115.5	0.24	22	
	0.6		3.69	6.60	407.8	110.2	0.18		getting clearer.
8:43	0.8		3.69	6.46	403.5	105.2	0.16	21.4	
8:44	1L		3.69	6.43	402.6	101.4	0.14	21.3	
8:45	1.2L		3.68	6.41	403.0	97.7	0.11	21.2	
8:46	1.4L		3.69	6.42	401.5	93.7	0.11	21.4	

SAMPLING RECORD

Time Sampled: 9:00
Colour: None
Odour: None
Turbidity: (Low) Medium High
Hydrocarbon Sheen ? Yes (No)
DI Water Lab Certificate No.
Notes:

Sample IDs

Primary Duplicate: SRT-BH409
Secondary Duplicate:
Trip Blank: SRT-TB200
Rinsate: ~~Trip spike~~ SRT-TS200
Field Blank:

Sample Containers/Preservation (F=Filtered; UF=Unfiltered; P=Preserved; UP=Unpreserved)

2 x 40 Vials (P/UP)		1	Metals (F/UF/P/UP) 60 mL
1 x 0.5 1L Amber		1	Cyanide PFAS 250 mL Plastic
1L Plastic		1	Sulphide 250 mL Plastic
Phenols/COD/NH3 (F/UF; P/UP)		2 x 60mL	Other Amber.
Ferrous/Ferric Iron (F/UF; P/UP)		2	Other 60 mL Plastic

10 containers in total
Dissolved Metals field filtered.

GROUNDWATER SAMPLING RECORD FORM
LOW FLOW PURGING and SAMPLING (incl. low yielding wells)

GOLDER

PROJECT INFORMATION			
WELL ID:	SRT-BH419	Project Number: 1791865	Date: 28/10/18
		Client: SMA	Sampled By: T.M
		Site Location: WATERLOO	Time: 8.15

Weather Conditions (Temperature, Precipitation, Wind): Cloudy, Windy

Well Maintenance Required? YES / NO Detail

WELL INFORMATION	
Diameter of standpipe (mm)	50 mm
Standpipe stick up (m)	M.S cm below ground level.
Surveyed reference point	
Depth to top of filter pack (from log)	
Depth to bottom of filter pack (from log)	
Depth of well (from log)	

mbRP - metres below top of reference point
Hose volume - 0.12 L/m of 1/2 inch diameter hose
Hose volume - 0.07 L/m of 3/8 inch diameter hose
Hose volume - 0.03 L/m of 1/4 inch diameter hose

GAUGING INFORMATION			
Pre-Sampling Information		Purging and Sampling Information	
Interface probe used?	YES / NO	Depth of pump intake (mbRP)	
Initial depth to water (mbRP)	3.72 mbTOP	Length of hose (m)	
Depth to product (mbRP)		Volume in hose (L)	
Thickness of product (m)		Depth to water after placement of pump (mbRP)	
Bailed product thickness (m)		Depth to water at end of purging (mbRP)	
Total depth of well (mbRP)		Depth to water after collection of samples (mbRP)	
Thickness of sediment on base of well (m)		Purging and Sampling Method	

Controller settings	
CPM	
Refill	
Discharge	
Throttle	

WQM Model: YSI PRO PLUS 10H100317
WQM Calibration Certificate: 26/10/18 Airmet

GROUNDWATER MONITORING WELL PURGING RECORD

Time	Cumulative Volume Purged (L)	Flow Rate (L/min)	Depth to Water (mbRP)	±0.1 pH	±5% Conductivity (µS/cm)	±10 Redox (mV)	±10% Dissolved Oxygen (ppm)	±0.5°C Temperature (°C)	Appearance (Colour, Turbidity, Odour, etc)
8:36	0.25		3.72	6.64	443	-29.7	0.06	19.2	High turbidity Brown
8:38	0.5		3.73	6.46	429	-29.7	0.02	19.2	" "
8:42	0.75		3.73	6.33	426	-32.4	0.01	19.2	"
8	1.5		3.74	6.29	449	-31.9	0	19.2	" "
8:47	2		3.74	6.23	562	-22.6	0.16	18.9	Clearer - Pulled tubing another meter from bottom
8:49	2.5		3.76	6.22	575	-14.6	0.13	18.9	Slightly brown.
8:51	2.75		3.77	6.21	569	-10.4	0.15	18.9	
8:53	3		3.76	6.19	506	-6.8	0.09	18.9	Clear Slightly brown/orang.

SAMPLING RECORD

Time Sampled: 9:00
Colour: Clear Slightly brown/orange
Odour:
Turbidity: (Low) Medium High
Hydrocarbon Sheen ? Yes (No)
DI Water Lab Certificate No.
Notes: 3.72 mbTOP at end of sampling

Sample IDs
Primary Duplicate: SRT-BH419
Secondary Duplicate: /
Trip Blank:
Rinsate:
Field Blank:

Sample Containers/Preservation (F=Filtered; UF=Unfiltered; P=Preserved; UP=Unpreserved)

2 x 60mL	Vials (P/UP)	1 bottle	Metals (F/UF;P/UP)
1 x 0.5L	1L Amber	1	Cyanide PFAS 250mL Plastic
	1L Plastic	1	Sulphide 250mL Plastic
	Phenols/COD/NH3 (F/UF; P/UP)	2	Other 60mL Amber
	Ferrous/Ferric Iron (F/UF; P/UP)	2	Other 60mL Plastic

GROUNDWATER SAMPLING RECORD FORM
LOW FLOW PURGING and SAMPLING (incl. low yielding wells)

GOLDER

PROJECT INFORMATION			
Project Number:	1791865	Date:	1/11/2018
Client:	SNA	Sampled By:	T.M
Site Location:	WATERLOO	Time:	5:00

WELL ID:	SRT-BH420

Weather Conditions (Temperature, Precipitation, Wind): Sunny

Well Maintenance Required? YES / NO (NO) Detail:

WELL INFORMATION	
Diameter of standpipe (mm)	50 mm
Standpipe stick up (m)	0.065 m below gl.
Surveyed reference point	
Depth to top of filter pack (from log)	
Depth to bottom of filter pack (from log)	
Depth of well (from log)	

mbRP - metres below top of reference point
Hose volume - 0.12 L/m of 1/2 inch diameter hose
Hose volume - 0.07 L/m of 3/8 inch diameter hose
Hose volume - 0.03 L/m of 1/4 inch diameter hose

GAUGING INFORMATION			
Pre-Sampling Information		*Purging and Sampling Information*	
Interface probe used?	YES / NO	Depth of pump intake (mbRP)	
Initial depth to water (mbRP)	3.87 mbRP	Length of hose (m)	
Depth to product (mbRP)	3.935 mbgl. NO Product	Volume in hose (L)	
Thickness of product (m)		Depth to water after placement of pump (mbRP)	
Bailed product thickness (m)		Depth to water at end of purging (mbRP)	
Total depth of well (mbRP)		Depth to water after collection of samples (mbRP)	
Thickness of sediment on base of well (m)		Purging and Sampling Method	Peri-pump.

Controller settings	
CPM	
Refill	
Discharge	
Throttle	

WQM Model: YSI Pro plus 10D10143
WQM Calibration Certificate: 1/11/2018 Attached.

GROUNDWATER MONITORING WELL PURGING RECORD

Time	Cumulative Volume Purged (L)	Flow Rate (L/min)	Depth to Water (mbRP)	±0.1 pH	±5% Conductivity (µS/cm)	±10 Redox (mV)	±10% Dissolved Oxygen (ppm)	±0.5°C Temperature (°C)	Appearance (Colour, Turbidity, Odour, etc)
5:20	0.2		3.87	6.44	381.8	156.9	2.74	23.1	Grey/brown, high turbidity, no odour
5:22	0.4		3.88	6.04	375.0	155.1	2.87	23.1	" " "
5:24	0.6		3.89	5.92	374.4	155.3	2.87	23.0	" med. turbity, no odour
5:26	0.8		3.89	5.87	374.1	154.5	2.48	22.9	Getting cleaner.
5:30	1 L		3.88	5.85	375.2	153.5	2.50	23	Clear slightly cloudy. no odour
5:31	1.2		3.88	5.85	376.8	151.9	2.52	23.1	" " "
5:32	1.4		3.86	5.86	380.7	150.4	2.43	23.3	" " "

SAMPLING RECORD

Time Sampled: 5:30 pm
Colour: Clear slightly cloudy
Odour: No odour.
Turbidity: (Low) Medium High
Hydrocarbon Sheen ? Yes No
DI Water Lab Certificate No.:

Sample IDs

Primary Duplicate:	SRT-BH420
Secondary Duplicate:	
Trip Blank:	
Rinsate:	
Field Blank:	

Sample Containers/Preservation (F=Filtered; UF=Unfiltered; P=Preserved; UP=Unpreserved)

2x	Vials (P/UP)		Metals (F/UF;P/UP)
1 x	1L Amber		Cyanide
	1L Plastic		Sulphide
	Phenols/COD/NH3 (F/UF; P/UP)		Other
	Ferrous/Ferric Iron (F/UF; P/UP)		Other

Notes: 10 containers + 2 small Amber for lab QA/QC
Dissolved Metals were field filtered!

GROUNDWATER SAMPLING RECORD FORM
LOW FLOW PURGING and SAMPLING (incl. low yielding wells)

GOLDER

PROJECT INFORMATION			
WELL ID:	SRT-BH426	Project Number:	1791865
		Client:	SMA
		Site Location:	WATERLOO
		Date:	28/10/18
		Sampled By:	TM
		Time:	10:00

Weather Conditions (Temperature, Precipitation, Wind): Cloudy / Windy

Well Maintenance Required? YES / (NO) Detail:

WELL INFORMATION	
Diameter of standpipe (mm)	
Standpipe stick up (m)	
Surveyed reference point	
Depth to top of filter pack (from log)	
Depth to bottom of filter pack (from log)	
Depth of well (from log)	

mbRP - metres below top of reference point
Hose volume - 0.12 L/m of 1/2 inch diameter hose
Hose volume - 0.07 L/m of 3/8 inch diameter hose
Hose volume - 0.03 L/m of 1/4 inch diameter hose

GAUGING INFORMATION			
Pre-Sampling Information		*Purging and Sampling Information*	
Interface probe used?	YES / NO	Depth of pump intake (mbRP)	
Initial depth to water (mbRP)	3.72 mbTOC	Length of hose (m)	
Depth to product (mbRP)		Volume in hose (L)	
Thickness of product (m)		Depth to water after placement of pump (mbRP)	
Bailed product thickness (m)		Depth to water at end of purging (mbRP)	
Total depth of well (mbRP)		Depth to water after collection of samples (mbRP)	
Thickness of sediment on base of well (m)		Purging and Sampling Method	

Controller settings	
CPM	
Refill	
Discharge	
Throttle	

WQM Model: YSI PRO PLUS 10H100317

WQM Calibration Certificate: 26/10/2018 Airmic

GROUNDWATER MONITORING WELL PURGING RECORD

Time	Cumulative Volume Purged (L)	Flow Rate (L/min)	Depth to Water (mbRP)	±0.1 pH	±5% Conductivity (µS/cm)	±10 Redox (mV)	±10% Dissolved Oxygen (ppm)	±0.5°C Temperature (°C)	Appearance (Colour, Turbidity, Odour, etc)
9:41	0.25		3.71	6.27	480	76.5	6.90	19.1	clear
9:43	0.5			6.21	482.9	79.6	7.29	19.4	
9:44	0.75		3.72	6.19	470.3	82.6	7.35	19.3	"
9:46	1		3.72	6.17	467.4	85.4	7.23	19.3	"
9:47	1.25		3.72	6.16	478.4	88.6	7.48	19.5	"
9:48	1.5		3.73	6.16	492	90.6	7.36	19.3	"
9:50	1.75		3.72	6.16	497.8	91.9	7.4	19.2	"
9:50	2		3.72	6.17	502	93.1	7.52	19.3	"

SAMPLING RECORD

Time Sampled: 10:00
Colour: Clear
Odour: No
Turbidity: (Low) Medium High
Hydrocarbon Sheen ? Yes (No)
DI Water Lab Certificate No.:
Notes: 2 extra amber containers collected for lab QA/QC

Sample IDs

Primary Duplicate: SRT-BH426
Secondary Duplicate:
Trip Blank:
Rinsate:
Field Blank:

Sample Containers/Preservation (F=Filtered; UF=Unfiltered; P=Preserved; UP=Unpreserved)

2x40mL	Vials (P/UP)	1	Metals (F/UF;P/UP)
1x0.5L	Amber	1	Cyanide PFAS 250mL Plastic
	1L Plastic	1	Sulphide 250mL Plastic
	Phenols/COD/NH3 (F/UF; P/UP)	2	Other 60mL Amber
	Ferrous/Ferric Iron (F/UF; P/UP)	2	Other 60mL Plastic

APPENDIX E

Borelogs and Groundwater Well Installations

FINAL REPORT OF BOREHOLE: SRT_BH408

SHEET: 1 OF 1

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333597.5 m E 6247636.5 m N MGA94 56
SURFACE RL: 15.66 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 3.20 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: TA + RB DATE: 6-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	15.66	SRT_BH408_0.2 DS 0.00 m R = 0A				CONCRETE			
				0.20								
HA				15.46	PID = 0.5 ppm				FILL: SAND fine grained, grey, trace charcoal, well sorted	D - M		
			0.5	*0.50*								
				15.16	SRT_BH408_0.5 DS 0.50 m R = 0A PID = 0.1 ppm				SAND fine grained, uniform, pale grey			NATURAL
				0.80								
				14.86					: as above white, uniform	D		
			1.0		SRT_BH408_1.0 DS 1.00 m R = 0A							
				1.20	PID = 0.2 ppm							
				14.46					SAND fine to medium grained, brown red, with silt, well sorted			
PT	L	GWNE	1.5		SRT_BH408_1.5 DS 1.50 m R = 0A PID = 0.2 ppm					D - M	L	
			2.0		SRT_BH408_2.0 U 2.00 m R = 0A PID = 0.7 ppm							
			2.5	*2.60*						M		
				13.06					SAND fine grained, uniform, pale yellow			
			3.0		SRT_BH408_3.0 U 3.00 m R = 0A PID = 0.9 ppm							
				12.46					END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED Soil Vapour Probe Installed			
			3.5									
			4.0									
			4.5									
			5.0									

This report of borehole must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

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GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH408

SHEET: 1 OF 1

CLIENT:	TfNSW	COORDS:	333597.5 m E 6247636.5 m N MGA94 56	DRILL RIG:	Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL:	15.66 m DATUM: AHD	CONTRACTOR:	Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION:	-90°	LOGGED: TA + RB	DATE: 6-10-18
JOB NO:	1791865	HOLE DEPTH:	3.20 m	CHECKED: BH	DATE: 14-12-18

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	ID BH408 Type Tip Depth & RL 2.00 m 13.66 m AHD Installation Date 06-10-18
CC		0.0	15.66		CONCRETE	BH408
			0.20			Teflon tubing
			15.46		SAND	Grout
			0.50			0.50, RL15.16
		0.5	15.16		SAND	
HA			0.80			
			14.86			Bentonite
		1.0	1.20			
			14.46		SAND	
	GWNE					1.50, RL14.16
		1.5				8/16 graded sand
						152mm stainless steel vapour probe
						SCREEN
PT		2.0				
						2.50, RL13.16
		2.5	2.60			
			13.06		SAND	Collapse
		3.0	3.20			3.20, RL12.46
			12.46		END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED Soil Vapour Probe Installed	
		3.5				
		4.0				
		4.5				
		5.0				

This report of standpipe installation must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

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RL1

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FINAL REPORT OF BOREHOLE: SRT_BH409

SHEET: 1 OF 2

CLIENT:	TfNSW	COORDS: 333588.9 m E 6247633.6 m N MGA94 56	DRILL RIG: Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL: 15.46 m DATUM: AHD	CONTRACTOR: Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°	LOGGED: TA + RB DATE: 6-10-18
JOB NO:	1791865	HOLE DEPTH: 7.20 m	CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	15.46					ASPHALT			
				0.10								
				15.36	SRT_409_0.1				FILL: Sandy GRAVEL			
				0.20	DS 0.10 m				fine to medium grained, sub-angular to angular, poorly sorted,			
	H			15.26	R = 1A				dark brown black, fine to medium grained sand	D	D	
					PID = 0.3 ppm				FILL: SAND			large fragments of concrete approx. 10cm
				0.40					fine to medium grained, dark brown black			@ 0.3-0.4mbgl
				15.06								NATURAL
			0.5		SRT_409_0.5				SAND			
					DS 0.50 m				fine grained, uniform, pale grey white			
					QCA101 / QCB101							
					R = 0A							
HA					PID = 0.4 ppm							
			1.0		SRT_409_1.0							
					DS 1.00 m							
					R = 0A							
					PID = 0.2 ppm							
				1.40								
				14.06					: as above dark brown, some silt			
			1.5		SRT_409_1.5							
					DS 1.50 m							
					R = 0A							
					PID = 0.3 ppm					D - M		
				1.90								
				13.56					: as above pale brown, no silt			
			2.0		SRT_409_2.0							
					U 2.00 m							
					R = 0A							
					PID = 0.6 ppm							
			2.5									
PT												
	L										L	
				3.00								
			3.0	12.46	SRT_409_3.0				: as above brown / pale red			
					U 3.00 m							
					R = 0A							
					PID = 0.4 ppm					M		
		▽	3.5									
			4.0		SRT_409_4.0							
					U 4.00 m							
					R = 0A							
					PID = 0.3 ppm					W		
			4.5									
			5.0									

This report of borehole must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

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FINAL REPORT OF BOREHOLE: SRT_BH409

SHEET: 2 OF 2

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333588.9 m E 6247633.6 m N MGA94 56
SURFACE RL: 15.46 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 7.20 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: TA + RB DATE: 6-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
PT			5.0						SAND fine grained, uniform, pale grey white		L	NATURAL
			5.5									
			6.0	6.00 9.46								
ADV	L		6.5						CLAY medium to high plasticity, brown orange	W	St	
			7.0									
				8.26					END OF BOREHOLE @ 7.20 m TARGET DEPTH REACHED Groundwater Well Installed			
			7.5									
			8.0									
			8.5									
			9.0									
			9.5									
			10.0									

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GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH409

SHEET: 1 OF 2

CLIENT:	TfNSW	COORDS:	333588.9 m E 6247633.6 m N MGA94 56	DRILL RIG:	Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL:	15.46 m DATUM: AHD	CONTRACTOR:	Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION:	-90°	LOGGED: TA + RB	DATE: 6-10-18
JOB NO:	1791865	HOLE DEPTH:	7.20 m	CHECKED: BH	DATE: 14-12-18

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	
CC		0.0	15.46		ASPHALT	
			0.10			
			15.36		SANDY GRAVEL	
			0.20			
			15.26		SAND	
			0.40			
			15.06		SAND	
HA		0.5				Grout
						uPVC Class 18 50mm casing
		1.0				1.00, RL14.46
			1.40			
			14.06		SAND	
		1.5				Bentonite
			1.90			
			13.56		SAND	
		2.0				2.00, RL13.46
PT		2.5				
			3.00			
		3.0	12.46		SAND	Filter pack 8/16" graded gravel
		3.5				Pre pack 50mm slotted screen
		4.0				
		4.5				
		5.0				

This report of standpipe installation must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

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GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH409

SHEET: 2 OF 2

CLIENT:	TfNSW	COORDS: 333588.9 m E 6247633.6 m N MGA94 56	DRILL RIG: Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL: 15.46 m DATUM: AHD	CONTRACTOR: Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°	LOGGED: TA + RB DATE: 6-10-18
JOB NO:	1791865	HOLE DEPTH: 7.20 m	CHECKED: BH DATE: 14-12-18

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	*DEPTH* RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	
PT		5.0			SAND	5.50, RL9.96 End cap
		5.5				
			6.00 9.46			
		6.0			CLAY	
ADV		6.5				1/4" coated bentonite
		7.0	*7.20* 8.26			7.20, RL8.26
					END OF BOREHOLE @ 7.20 m TARGET DEPTH REACHED Groundwater Well Installed	
		7.5				
		8.0				
		8.5				
		9.0				
		9.5				
		10.0				

This report of standpipe installation must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

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GAP 8_16.6 LIB.GLB Log GAP WELL 3 SYDNEY METRO.GPJ <<DrawingFile>> 14-12-2018 16:30 8.30.004 Datgel Tools

FINAL REPORT OF BOREHOLE: SRT_BH410

SHEET: 1 OF 1

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333597.0 m E 6247653.7 m N MGA94 56
SURFACE RL: 15.25 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 3.20 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: TA + RB DATE: 6-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC		GWNE	0.0	15.25					CONCRETE			
				0.18								
HA	L			15.07	SRT_BH410_0.2 DS 0.20 m R = 0A PID = 0.5 ppm				FILL: SAND fine to medium grained, brown orange, with silt, well sorted	M	L	
				0.40								
CC			0.5	14.85					CONCRETE			
				0.79								
HA	M		1.0	14.46	SRT_BH410_0.8 DS 0.80 m R = 0A PID = 0.9 ppm SRT_BH410_1.0 DS 1.00 m R = 0A PID = 1 ppm				SAND fine to medium grained, uniform, brown orange	M - W	L	NATURAL
			1.5	1.50 13.75	SRT_BH410_1.5 DS 1.50 m R = 0A PID = 0.5 ppm				Silty SAND fine grained, uniform, dark brown	M		
PT	L			1.70 13.55					SAND fine grained, uniform, brown orange	D - M	MD	
			2.0	2.00 13.25	SRT_BH410_2.0 U 2.00 m R = 0A				SAND fine grained, uniform, black, with silt	D		
				2.10 13.15					: as above dark brown grey			Very compact, difficult to PT
	M-H		2.5							D - M	D	
			3.0		SRT_BH410_3.0 U 3.00 m R = 0A PID = 0.8 ppm							
				12.05					END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED			
			3.5									
			4.0									
			4.5									
			5.0									

This report of borehole must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

GAP gINT FN. F01a
RL3

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FINAL REPORT OF BOREHOLE: SRT_BH411

SHEET: 1 OF 1

CLIENT:	TfNSW	COORDS: 333584.0 m E 6247660.7 m N MGA94 56	DRILL RIG: Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL: 15.18 m DATUM: AHD	CONTRACTOR: Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°	LOGGED: TA + RB DATE: 6-10-18
JOB NO:	1791865	HOLE DEPTH: 3.20 m	CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	15.18					CONCRETE			
				0.15 15.03	SRT_BH411_0.15 0.15 m QCA100/QCB100 R = 0A PID = 0.8 ppm				FILL: SAND fine to medium grained, well sorted, pale brown, trace charcoal and gravel			
				0.30 14.88					FILL: SAND fine grained, well sorted, brown, trace charcoal			Large sandstone cobble @ 0.3mbgl
HA	L-M		0.5		SRT_BH411_0.5 0.50 m R = 0A PID = 0.9 ppm						MD	
				1.00								
			1.0	14.18	SRT_BH411_1.0 1.00 m R = 0A PID = 1.3 ppm				SAND fine grained, uniform, brown grey	D - M		NATURAL
				1.30 13.88					: as above orange brown			
PT	L	GWNE	1.5		SRT_BH411_1.5 1.50 m R = 0A PID = 0.9 ppm							
				2.00								
			2.0	13.18	SRT_BH411_2.0 2.00 m R = 0A PID = 0.9 ppm				: as above brown grey		L - MD	
				2.20 12.98					: as above pale grey	M		
			2.5									
			3.0		SRT_BH411_3.0 3.00 m R = 0A PID = 0.2 ppm							
				11.98					END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED			
			3.5									
			4.0									
			4.5									
			5.0									

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FINAL REPORT OF BOREHOLE: SRT_BH412

SHEET: 1 OF 1

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333592.2 m E 6247673.9 m N MGA94 56
SURFACE RL: 15.19 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 3.20 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: TA DATE: 6-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	15.19 *0.11*					CONCRETE			
HA	H			15.08 *0.30* 14.89	SRT_BH412_0.11 0.11 m R = 0A PID = 0.3 ppm				FILL: Sandy GRAVEL fine to coarse grained, sub-angular to angular, pale grey, medium to coarse grained sand	M		Large sandstone cobbles (~10cm)
			0.5		SRT_BH412_0.5 0.50 m R = 1A PID = 0.3 ppm				FILL: Gravelly SAND fine to coarse grained, sub-angular to angular, brown, fine to medium grained gravel	D - M	VD	Trace brick fragments, blue metal gravels and smaller sandstone cobbles (~5cm)
			1.0		SRT_BH412_1.0 1.00 m R = 1A PID = 0.2 ppm							
				1.30 13.89								Refusal with hand auger @ 1.2mbgl
PT	L	GWNE	1.5		SRT_BH412_1.5 1.50 m R = 0A PID = 0.2 ppm				SAND fine grained, uniform, pale grey	M	L - MD	NATURAL
				1.70 13.49					: as above brown			
			2.0		SRT_BH412_2.0 2.00 m R = 0A PID = 0.4 ppm							
			2.5	*2.50* 12.69					: as above pale brown to grey			
			3.0		SRT_BH412_3.0 3.00 m R = 0A PID = 0.2 ppm							
				11.99					END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED			
			3.5									
			4.0									
			4.5									
			5.0									

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FINAL REPORT OF BOREHOLE: SRT_BH413A

SHEET: 1 OF 1

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333570.7 m E 6247708.1 m N MGA94 56
SURFACE RL: 15.45 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 3.20 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: RB DATE: 28-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	15.45					CONCRETE			
				0.24								
HA	H		0.5	15.21	BH413A_0.25 DS 0.25 m R = 1A PID = 1.5 ppm				FILL: Gravelly SAND fine to coarse grained, poorly sorted, pale brown, fine to coarse grained, angular to subangular gravel	D		Fragments of blue metal, gravel and sandstone cobbles Trace brick ~20% @ 0.4-0.5mbgl
				0.50								
	M			14.95	BH413A_0.4 DS 0.40 m R = 1A BH413A_0.5 DS 0.50 m R = 0A PID = 2 ppm				FILL: Silty SAND fine to medium grained, uniform, dark brown	D - M		Fragments of glass and brick @ 0.5mbgl Potential reworked natural @ 0.5-0.8mbgl
				0.80								
				14.65					SAND fine to medium grained, uniform, brown			NATURAL
			1.0		BH413A_1.0 DS 1.00 m QCA110 QCB110 R = 0A PID = 1.2 ppm							
				1.20								
				14.25					: as above pale grey			
				1.50								
PT	L	GWNE	1.5	13.95	BH413A_1.5 U 1.50 m R = 0A PID = 1.7 ppm				Silty SAND fine to medium grained, dark brown	M		
			2.0		BH413A_2.0 U 2.00 m R = 0A PID = 0.8 ppm							
				2.50								
			2.5	12.95	BH413A_2.5 U 2.50 m R = 0A PID = 0.8 ppm				SAND fine to medium grained, uniform, brown			
				3.00								
			3.0	12.45	BH413A_3.0 U 3.00 m R = 0A PID = 0.9 ppm				: as above becoming paler	M - W		
				12.25					END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED			
			3.5									
			4.0									
			4.5									
			5.0									

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FINAL REPORT OF BOREHOLE: SRT_BH414

SHEET: 1 OF 1

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333560.7 m E 6247687.7 m N MGA94 56
SURFACE RL: 15.55 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 0.50 m

DRILL RIG:
CONTRACTOR: Matrix
LOGGED: RB DATE: 13-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	15.55 *0.12*								
HA	H	GWNE		15.43	BH414_0.15 DS 0.15 m R = 1A PID = 0.6 ppm BH414_0.4 DS 0.40 m R = 1A PID = 1 ppm				FILL: Gravelly SAND fine to medium grained, poorly graded, brown, fine to medium grained gravel	M		Fragments of brick, tile, concrete and charcoal
			0.5	15.05					END OF BOREHOLE @ 0.50 m REFUSAL ON BRICKS			
			1.0									
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									
			4.0									
			4.5									
			5.0									

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FINAL REPORT OF BOREHOLE: SRT_BH415

SHEET: 1 OF 2

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333559.2 m E 6247720.5 m N MGA94 56
SURFACE RL: 15.39 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 5.20 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: RB DATE: 20-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	15.39					CONCRETE			
				0.19								
HA	H		0.5	15.20	BH415_0.2 0.20 m R = 1A PID = 1 ppm				FILL: Gravelly SAND fine to coarse grained, grey, fine to coarse grained, sub-angular to angular gravel			Road base cobbles ~10cm sandstone
				0.50						M	D	
				14.89	BH415_0.5 0.50 m QCA106 / QCB106 R = 1A PID = 0.8 ppm				: as above slightly more pale, gravel content decreasing			
				0.80								
			1.0	14.59					SAND fine to medium grained, uniform, brown, with silt			NATURAL
					BH415_1.0 1.00 m R = 0A PID = 1 ppm							
			1.5		BH415_1.5 1.50 m R = 0A PID = 0.4 ppm							
				1.90						D - M		
				13.49					: as above dark brown			
			2.0		BH415_2.0 2.00 m R = 0A PID = 0.5 ppm							
				2.20								
				13.19					: as above pale grey brown			
			2.5									
				2.90							MD - L	
PT	L	▽		12.49					SAND fine to medium grained, uniform, pale brown			
			3.0		BH415_3.0 3.00 m R = 0A PID = 0.3 ppm							
			3.5									
				4.00						W		
			4.0	11.39	BH415_4.0 4.00 m R = 0A PID = 0.3 ppm				: as above pale grey			
			4.5									
			5.0									

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GAP gINT FN. F01a
RL3

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FINAL REPORT OF BOREHOLE: SRT_BH415

SHEET: 2 OF 2

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333559.2 m E 6247720.5 m N MGA94 56
SURFACE RL: 15.39 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 5.20 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: RB DATE: 20-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
PT	L		5.0	*5.10* 10.29	BH415_5.0 5.00 m R = 0A PID = 0.5 ppm				Silty SAND fine to medium grained, dark brown	W	MD - L	NATURAL
				10.19	BH415_5.1 5.10 m R = 0A				END OF BOREHOLE @ 5.20 m Soil Vapour Probe Installed			
			5.5									
			6.0									
			6.5									
			7.0									
			7.5									
			8.0									
			8.5									
			9.0									
			9.5									
			10.0									

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GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH415

SHEET: 1 OF 2

CLIENT:	TfNSW	COORDS: 333559.2 m E 6247720.5 m N MGA94 56	DRILL RIG: Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL: 15.39 m DATUM: AHD	CONTRACTOR: Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°	LOGGED: RB DATE: 20-10-18
JOB NO:	1791865	HOLE DEPTH: 5.20 m	CHECKED: BH DATE: 14-12-18

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	ID BH415 Type Tip Depth & RL 2.00 m 13.39 m AHD Installation Date 20-10-18
CC		0.0	15.39		CONCRETE	
			0.19			
			15.20		GRAVELLY SAND	
		0.5	0.50			0.50, RL14.89
			14.89			
HA			0.80			
			14.59		SAND	
		1.0				
		1.5				1.50, RL13.89
			1.90			
			13.49			SCREEN
		2.0				
			2.20			
			13.19			
		2.5				
PT	▽		2.90			
			12.49		SAND	
		3.0				3.20, RL12.19
		3.5				
			4.00			
		4.0	11.39			
		4.5				
		5.0				

BH415

Teflon tubing
Grout
Bentonite
152mm stainless steel vapour probe with weight
8/16" gravel pack
Collapse

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GAP gINT FN. F17
RL1

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GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH415

SHEET: 2 OF 2

CLIENT:	TfNSW	COORDS: 333559.2 m E 6247720.5 m N MGA94 56	DRILL RIG: Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL: 15.39 m DATUM: AHD	CONTRACTOR: Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°	LOGGED: RB DATE: 20-10-18
JOB NO:	1791865	HOLE DEPTH: 5.20 m	CHECKED: BH DATE: 14-12-18

Drilling				Field Material Description		Instrumentation Details			
METHOD	WATER	DEPTH (metres)	*DEPTH* RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	ID	Type	Tip Depth & RL	Installation Date
						BH415		2.00 m 13.39 m AHD	20-10-18
PT		5.0	*5.10* 10.29		SAND				
			5.20 10.19		SILTY SAND			5.20, RL10.19	
					END OF BOREHOLE @ 5.20 m Soil Vapour Probe Installed				
		5.5							
		6.0							
		6.5							
		7.0							
		7.5							
		8.0							
		8.5							
		9.0							
		9.5							
		10.0							

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FINAL REPORT OF BOREHOLE: SRT_BH416

SHEET: 1 OF 1

CLIENT:	TfNSW	COORDS: 333572.6 m E 6247728.1 m N MGA94 56	DRILL RIG: Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL: 15.56 m DATUM: AHD	CONTRACTOR: Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°	LOGGED: PK DATE: 7-10-18
JOB NO:	1791865	HOLE DEPTH: 3.20 m	CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC	H	GWNE	0.0	15.56					CONCRETE			
				0.25								
				15.31	SRT_BH416_0.25				FILL: Gravelly SAND			Sandstone gravels between 0.25 - 0.90mbgl
				15.26	0.23 m				fine to coarse grained, brown, trace silt			
				0.40	R = 0A				: as above colour change to grey and pale grey/yellow			
				15.16	PID = 0.4 ppm							
				0.50					Silty SAND			
			0.5	15.06	SRT_BH416_0.5				fine to medium grained, dark brown, trace gravel			
					0.50 m				FILL: Silty SAND			
					R = 0A				fine to medium grained, dark brown, with gravel			
					PID = 0.7 ppm							
HA				0.90								
				14.66					SAND			NATURAL
			1.0		SRT_BH416_1.0				fine to medium grained, pale grey/brown			
					1.00 m							
					R = 0A							
				1.20	PID = 0.6 ppm							
				14.36					: as above with bands of silty sand, dark/red/brown			
			1.5		SRT_BH416_1.5							
					1.50 m							
					R = 0A							
					PID = 0.7 ppm							
	M-L									D		
				2.00								
PT			2.0	13.56	SRT_BH416_2.0				: as above pale grey/white			
					2.00 m							
					R = 0A							
					PID = 0.8 ppm							
				2.50								
			2.5	13.06					: as above brown			
				2.65								
				12.91					: as above pale grey			
			3.0		SRT_BH416_3.0							
					3.00 m							
					R = 0A							
					PID = 0.8 ppm							
				12.36					END OF BOREHOLE @ 3.20 m			
									TARGET DEPTH REACHED			
									Soil Vapour Probe Installed			
			3.5									
			4.0									
			4.5									
			5.0									

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GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH416

SHEET: 1 OF 1

CLIENT:	TfNSW	COORDS: 333572.6 m E 6247728.1 m N MGA94 56	DRILL RIG: Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL: 15.56 m DATUM: AHD	CONTRACTOR: Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°	LOGGED: PK DATE: 7-10-18
JOB NO:	1791865	HOLE DEPTH: 3.20 m	CHECKED: BH DATE: 14-12-18

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	ID BH416 Type Tip Depth & RL 2.00 m 13.56 m AHD Installation Date 07-10-18
CC		0.0	15.56		CONCRETE	BH416
			0.25			Teflon tubing
			15.30		GRAVELLY SAND	Grout
			15.26			
			0.40			
			15.16		SILTY SAND	
			0.50			
		0.5	15.06		SILTY SAND	
						0.60, RL14.96
HA			0.90			
			14.66		SAND	
		1.0				Bentonite
			1.20			
			14.36			
		1.5				1.60, RL13.96
	GWNE					SCREEN
			2.00			152mm stainless steel vapour probe with weight
		2.0	13.56			
PT						8/16" graded gravel filter pack
			2.50			
		2.5	13.06			
			2.65			
			12.91			
		3.0				3.20, RL12.36
			3.20			
			12.36		END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED Soil Vapour Probe Installed	
		3.5				
		4.0				
		4.5				
		5.0				

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GAP gINT FN. F17
RL1

GAP 8_16.6 LIB.GLB Log GAP WELL 3 SYDNEY METRO.GPJ <<DrawingFile>> 14-12-2018 16:30 8.30.004 Datgel Tools

FINAL REPORT OF BOREHOLE: SRT_BH417

SHEET: 1 OF 1

CLIENT:	TfNSW	COORDS: 333551.8 m E 6247733.0 m N MGA94 56	DRILL RIG: Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL: 15.86 m DATUM: AHD	CONTRACTOR: Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°	LOGGED: TA DATE: 7-10-18
JOB NO:	1791865	HOLE DEPTH: 3.20 m	CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC	H	GWNE	0.0	15.86					CONCRETE			
				0.22								
HA	M-H			15.64	BH417_0.2 0.20 m R = 1A PID = 0.2 ppm				FILL: Sandy GRAVEL coarse grained, sub-angular, grey, trace fines	W		road base
				0.45						D		
			0.5	*0.52*					FILL: Sandy GRAVEL fine to coarse grained, sub-rounded to sub-angular, brown			metal rod fragments of tiles (ceramic & terracotta) and brick 0.45 - 0.52 mbgl
CC	M			15.34	BH417_0.5 0.50 m R = 1A PID = 0.8 ppm				CONCRETE			
			1.0	*1.20*								
HA	L-M			14.66					SAND fine to medium grained, pale grey			NATURAL
			1.5		BH417_1.5 1.50 m R = 0A PID = 0.3 ppm							
				1.80								
				14.06					: as above colour change to dark red-brown			
				2.00								
PT	L		2.0	13.86	BH417_2.0 2.00 m R = 0A PID = 0.3 ppm				: as above colour change to pale grey	D		
			2.5									
			3.0		BH417_3.0 3.00 m R = 0A PID = 0.6 ppm							
				12.66					END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED Soil Vapour Probe Installed			
			3.5									
			4.0									
			4.5									
			5.0									

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GAP gINT FN. F01a
RL3

GAP 8_16.6 LIB.GLB Log GAP NON-CORED FULL PAGE SYDNEY METRO.GPJ <<DrawingFile>> 14-12-2018 16:28 8.30.004 Datgel Tools

GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH417

SHEET: 1 OF 1

CLIENT:	TfNSW	COORDS: 333551.8 m E 6247733.0 m N MGA94 56		DRILL RIG: Geoprobe 7822 DT	
PROJECT:	Sydney Metro	SURFACE RL: 15.86 m DATUM: AHD		CONTRACTOR: Matrix	
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°		LOGGED: TA	DATE: 7-10-18
JOB NO:	1791865	HOLE DEPTH: 3.20 m		CHECKED: BH	DATE: 14-12-18

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	ID BH417 Type Tip Depth & RL 2.00 m 13.86 m AHD Installation Date 07-10-18
CC	GWNE	0.0	15.86		CONCRETE	BH417
			0.22			0.22, RL15.64 — Teflon tubing; Grout
HA			15.64		SANDY GRAVEL	
			0.45			
		0.5	0.52		SANDY GRAVEL	
CC			15.34		CONCRETE	
		1.0				Bentonite
			1.20			1.10, RL14.76
HA			14.66		SAND	
		1.5				
			1.80			152mm stainless steel vapour probe with weight
			14.06			SCREEN
		2.0	2.00			
			13.86			
PT		2.5				8/16" graded gravel filter pack
		3.0				
			3.20			3.20, RL12.66
			12.66		END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED Soil Vapour Probe Installed	
		3.5				
		4.0				
		4.5				
		5.0				

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GAP gINT FN. F17
RL1

GAP 8_16.6 LIB.GLB Log GAP WELL 3 SYDNEY METRO.GPJ <<DrawingFile>> 14-12-2018 16:30 8.30.004 Datgel Tools

FINAL REPORT OF BOREHOLE: SRT_BH418

SHEET: 1 OF 1

CLIENT:	TfNSW	COORDS: 333567.6 m E 6247753.1 m N MGA94 56	DRILL RIG: Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL: 16.20 m DATUM: AHD	CONTRACTOR: Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°	LOGGED: RB DATE: 27-10-18
JOB NO:	1791865	HOLE DEPTH: 3.20 m	CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	16.20					CONCRETE			
				0.15								
HA	H	GWNE		16.05	BH418_0.2 DS 0.20 m R = 1A PID = 0.4 ppm				FILL: Sandy GRAVEL fine to coarse grained, sub-angular to angular, poorly sorted, brown, fine to coarse sand	D - M		Fragments of sandstone, bricks and concrete ~50-60%
				0.40								
			0.5	15.80	BH418_0.5 DS 0.50 m R = 1A PID = 1.5 ppm				FILL: Gravelly SAND fine to coarse grained, well sorted, brown, fine gravel		D	Fragments of brick ~20%
				0.70								
				15.50					: as above orange brown			
				0.90								
			1.0	15.30	BH418_1.0 DS 1.00 m QCA109 / QCB109 R = 0A PID = 2 ppm				SAND fine to medium grained, uniform, brown grey	M		NATURAL
				1.20								
				15.00					Silty SAND fine to medium grained, uniform, dark brown			
			1.5		BH418_1.5 DS 1.50 m R = 0A PID = 0.3 ppm							
				1.70								
PT	L			14.50					SAND fine to medium grained, uniform, pale grey brown	M - W	MD - L	
			2.0		BH418_2.0 U 2.00 m R = 0A PID = 0.3 ppm							
			2.5									
			3.0		BH418_3.0 U 3.00 m R = 0A PID = 0 ppm							
				13.00					END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED			
			3.5									
			4.0									
			4.5									
			5.0									

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GAP gINT FN. F01a
RL3

GAP 8_16.6 LIB.GLB Log GAP NON-CORED FULL PAGE SYDNEY METRO.GPJ <<DrawingFile>> 14-12-2018 16:28 8.30.004 Datgel Tools

FINAL REPORT OF BOREHOLE: SRT_BH419

SHEET: 1 OF 2

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333536.3 m E 6247753.8 m N MGA94 56
SURFACE RL: 16.12 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 7.50 m

DRILL RIG: Dando Terrier
CONTRACTOR: BG Drilling
LOGGED: RB DATE: 20-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	16.12					CONCRETE			
			0.5									
			1.0	*1.05* 15.07	BH419_1.05 1.05 m R = 0A PID = 0.3 ppm				Silty SAND fine to medium grained, uniform, brown	M	MD - L	NATURAL
			1.5	*1.60* 14.52	BH419_1.5 1.50 m R = 0A PID = 0.3 ppm				SAND fine to medium grained, uniform, pale grey brown			
				1.80 14.32					: as above dark brown with some silt			
PT			2.0		BH419_2.0 2.00 m R = 0A PID = 0.2 ppm					D		
			2.5	*2.70* 13.42					SAND fine to medium grained, uniform, pale brown		L	
			3.0		BH419_3.0 3.00 m R = 0A PID = 0.2 ppm							
			3.5							M		
ADV		▽	4.0		BH419_4.0 4.00 m R = 0A PID = 0.2 ppm							
SPT			4.5		BH419_4.5 4.50 m R = 0A PID = 0.5 ppm					W		
			5.0									

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FINAL REPORT OF BOREHOLE: SRT_BH419

SHEET: 2 OF 2

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333536.3 m E 6247753.8 m N MGA94 56
SURFACE RL: 16.12 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 7.50 m

DRILL RIG: Dando Terrier
CONTRACTOR: BG Drilling
LOGGED: RB DATE: 20-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADV			5.0						SAND fine to medium grained, uniform, pale brown	W	L	NATURAL
			5.5									
			6.0									
			6.5									
			7.0	*7.20*								
				8.92	BH419_7.2 7.20 m R = 0A PID = 0.4 ppm				CLAY medium to high plasticity, pale grey			
			7.5	8.62					END OF BOREHOLE @ 7.50 m TARGET DEPTH REACHED Groundwater Well Installed			
			8.0									
			8.5									
			9.0									
			9.5									
			10.0									

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GAP gINT FN. F01a
RL3

GAP 8_16.6 LIB.GLB Log GAP NON-CORED FULL PAGE SYDNEY METRO.GPJ <<DrawingFile>> 14-12-2018 16:28 8.30.004 Datgel Tools

GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH419

SHEET: 1 OF 2

CLIENT:	TfNSW	COORDS:	333536.3 m E 6247753.8 m N MGA94 56	DRILL RIG:	Dando Terrier
PROJECT:	Sydney Metro	SURFACE RL:	16.12 m DATUM: AHD	CONTRACTOR:	BG Drilling
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION:	-90°	LOGGED: RB	DATE: 20-10-18
JOB NO:	1791865	HOLE DEPTH:	7.50 m	CHECKED: BH	DATE: 14-12-18

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	
CC		0.0	16.12		CONCRETE	
		1.0	1.05 15.07		SILTY SAND	Grout
		1.5	1.60 14.52		SAND	50mm uPVC class 18 casing
			1.80 14.32			
PT		2.0				2.00, RL14.12
		2.5	2.70 13.42		SAND	Bentonite
		3.0				3.00, RL13.12
		3.5				
ADV	▽	4.0				8/16" graded gravel filter pack
		4.5				
SPT		5.0				

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GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH419

SHEET: 2 OF 2

CLIENT:	TfNSW	COORDS: 333536.3 m E 6247753.8 m N MGA94 56	DRILL RIG: Dando Terrier
PROJECT:	Sydney Metro	SURFACE RL: 16.12 m DATUM: AHD	CONTRACTOR: BG Drilling
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°	LOGGED: RB DATE: 20-10-18
JOB NO:	1791865	HOLE DEPTH: 7.50 m	CHECKED: BH DATE: 14-12-18

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	*DEPTH* RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	
ADV		5.0			SAND	50mm uPCV class 18 slotted screen
		5.5				
		6.0				
		6.5				6.50, RL9.62 End cap
		7.0				Bentonite
			7.20 8.92		CLAY	
		7.5	*7.50* 8.62		END OF BOREHOLE @ 7.50 m TARGET DEPTH REACHED Groundwater Well Installed	7.50, RL8.62
		8.0				
		8.5				
		9.0				
		9.5				
		10.0				

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GAP gINT FN. F17
RL1

GAP 8_16.6 LIB.GLB Log GAP WELL 3 SYDNEY METRO.GPJ <<DrawingFile>> 14-12-2018 16:30 8.30.004 Datgel Tools

FINAL REPORT OF BOREHOLE: SRT_BH419a

SHEET: 1 OF 1

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333539.2 m E 6247744.8 m N MGA94 56
SURFACE RL: 15.96 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 1.20 m

DRILL RIG: Dando Terrier
CONTRACTOR: BG Drilling
LOGGED: RB DATE: 13-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC		GWNE	0.0	15.96					CONCRETE			
				0.25								
PT	H		0.5	15.71 *0.35* 15.61	BH419_0.25 0.25 m R = 0A PID = 6.1 ppm				FILL: Gravelly SAND fine to coarse grained, brown, fine to medium grained, angular to sub-angular gravel	M		roadbase
ADV					BH419_0.5 0.50 m R = 1A PID = 0.8 ppm				FILL: Sandy GRAVEL fine to coarse grained, angular, brown, fine to coarse grained sand	D - M	D	Fragments of brick, blue metal gravel, ceramic and metal. Large concrete boulder ~20x20cm
PT			1.0		BH419_1.0 1.00 m QCA104/QCB104 R = 1A PID = 1 ppm							
				14.76					END OF BOREHOLE @ 1.20 m REFUSAL ON CONCRETE			
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									
			4.0									
			4.5									
			5.0									

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GAP 8_16.6 LIB.GLB Log GAP NON-CORED FULL PAGE SYDNEY METRO.GPJ <<DrawingFile>> 14-12-2018 16:34 8.30.004 Datgel Tools

FINAL REPORT OF BOREHOLE: SRT_BH420

SHEET: 1 OF 2

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333563.7 m E 6247771.9 m N MGA94 56
SURFACE RL: 16.32 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 7.50 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: RB DATE: 6-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	16.32					CONCRETE			
				0.35 15.97					FILL: Silty Gravelly SAND brown and dark grey, with clay			fragments of igneous gravel, brick concrete, sandstone and tiles
			0.5		SRT_BH420_0.5 0.50 m							
			1.0		SRT_BH420_1.0 1.00 m						MD	
				1.35 14.97					SAND fine to medium grained, grey			NATURAL
			1.5									
				2.00 14.32	SRT_BH420_2.0 2.00 m				SAND fine to medium grained, black and brown, coffee rock	M	D	
			2.5	*2.60* 13.72					SAND fine to medium grained, yellow and grey			
			3.0		SRT_BH420_3.0 3.00 m						MD	
			3.5									
ADV			4.0		SRT_BH420_4.0-4.45 4.00 m							
SPT		▽										
			4.5							W		
ADV			5.0									

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FINAL REPORT OF BOREHOLE: SRT_BH420

SHEET: 2 OF 2

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333563.7 m E 6247771.9 m N MGA94 56
SURFACE RL: 16.32 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 7.50 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: RB DATE: 6-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADV			5.0						SAND fine to medium grained, yellow and grey			NATURAL
											MD	
SPT			5.5		SRT_BH420_5.5-5.95 5.50 m							
				5.80 10.52					Sandy CLAY yellow, grey and brown			
			6.0								F	
				6.30 10.02						W		
ADV			6.5						CLAY grey, red and orange mottled, trace organics			
											St	
			7.0		SRT_BH420_7.0-7.45 7.00 m							
SPT			7.5	8.82					END OF BOREHOLE @ 7.50 m TARGET DEPTH REACHED Groundwater Well Installed			
			8.0									
			8.5									
			9.0									
			9.5									
			10.0									

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GAP gINT FN. F01a
RL3

GAP 8_16.6 LIB.GLB Log GAP NON-CORED FULL PAGE SYDNEY METRO.GPJ <<DrawingFile>> 14-12-2018 16:28 8.30.004 Datgel Tools

GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH420

SHEET: 1 OF 2

CLIENT:	TfNSW	COORDS:	333563.7 m E 6247771.9 m N MGA94 56	DRILL RIG:	Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL:	16.32 m DATUM: AHD	CONTRACTOR:	Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION:	-90°	LOGGED: RB	DATE: 6-10-18
JOB NO:	1791865	HOLE DEPTH:	7.50 m	CHECKED: BH	DATE: 14-12-18

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	
CC		0.0	16.32		CONCRETE	
			0.35			
			15.97		SILTY GRAVELLY SAND	
		0.5				Grout
		1.0				uPVC Class 18 50mm casing
			1.20, RL15.12			
			1.35			
			14.97		SAND	
		1.5				Bentonite
			2.00			
ADV		2.0	14.32		SAND	
			2.30, RL14.02			
		2.5				
			2.60			
			13.72		SAND	
		3.0				
		3.5				Pre pack screen 50mm
		4.0				8/16" graded gravel
SPT		4.5				
ADV		5.0				

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GAP gINT FN. F17
RL1

GAP 8_16.6 LIB.GLB Log GAP WELL 3 SYDNEY METRO.GPJ <<DrawingFile>> 14-12-2018 16:30 8.30.004 Datgel Tools

GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH420

CLIENT:	TfNSW	COORDS: 333563.7 m E 6247771.9 m N MGA94 56	DRILL RIG: Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL: 16.32 m DATUM: AHD	CONTRACTOR: Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°	LOGGED: RB DATE: 6-10-18
JOB NO:	1791865	HOLE DEPTH: 7.50 m	CHECKED: BH DATE: 14-12-18

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	
ADV		5.0			SAND	
SPT		5.5	5.80 10.52		SANDY CLAY	5.80, RL10.52 End cap
ADV		6.0	6.30 10.02		CLAY	6.00, RL10.32
SPT		6.5				1/4" coated bentonite pellets
		7.0				
		7.5	7.50 8.82		END OF BOREHOLE @ 7.50 m TARGET DEPTH REACHED Groundwater Well Installed	7.50, RL8.82
		8.0				
		8.5				
		9.0				
		9.5				
		10.0				

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GAP 8_16.6 LIB.GLB Log GAP WELL 3 SYDNEY METRO.GPJ <<DrawingFile>> 14-12-2018 16:30 8.30.004 Datgel Tools

FINAL REPORT OF BOREHOLE: SRT_BH421

SHEET: 1 OF 1

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333532.7 m E 6247784.3 m N MGA94 56
SURFACE RL: 16.11 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 3.20 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: TA + RB DATE: 6-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	16.11					CONCRETE			
				0.23								
HA	H	GWNE	0.5	15.88	BH421_0.25 0.25 m R = 0A PID = 0.3 ppm BH421_0.5 0.50 m				FILL: Sandy GRAVEL fine to coarse grained, sub-angular to angular, dark brown, fine to coarse grained sand	W D - M	D	Road base gravels
				0.60								
				15.51	QCA102/QCB102 R = 0A PID = 0.2 ppm				SAND fine to medium grained, uniform, orange brown			NATURAL
			1.0	1.00								
				15.11	BH421_1.0 1.00 m R = 0A PID = 0.2 ppm				SAND fine grained, uniform, grey black, with silt			
			1.5		BH421_1.5 1.50 m R = 0A PID = 0.4 ppm							
PT	L		2.0		BH421_2.0 2.00 m R = 0A PID = 0.6 ppm					M	MD - L	
				2.20								
				13.91					SAND fine to medium grained, uniform, pale grey/white			
				2.40								
			2.5	13.71					: as above brown			
				2.60								
				13.51					: as above pale brown/grey			
			3.0		BH421_3.0 3.00 m R = 0A PID = 0.7 ppm							
				12.91					END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED Soil Vapour Probe Installed			
			3.5									
			4.0									
			4.5									
			5.0									

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GAP gINT FN. F01a
RL3

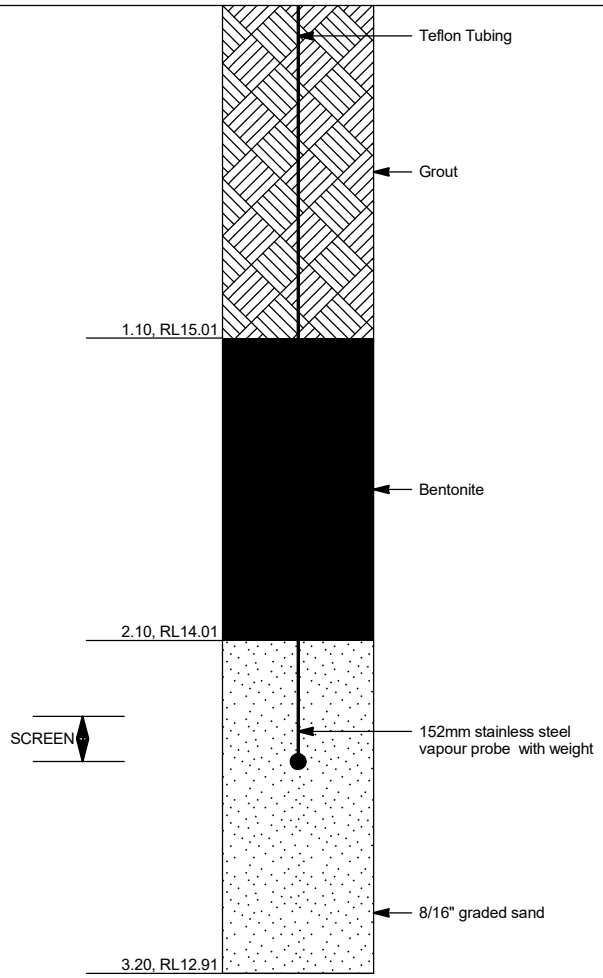
GAP 8_16.6 LIB.GLB Log GAP NON-CORED FULL PAGE SYDNEY METRO.GPJ <<DrawingFile>> 14-12-2018 16:28 8.30.004 Datgel Tools

GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH421

SHEET: 1 OF 1

CLIENT:	TfNSW	COORDS:	333532.7 m E 6247784.3 m N MGA94 56	DRILL RIG:	Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL:	16.11 m DATUM: AHD	CONTRACTOR:	Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION:	-90°	LOGGED: TA + RB	DATE: 6-10-18
JOB NO:	1791865	HOLE DEPTH:	3.20 m	CHECKED: BH	DATE: 14-12-18

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	ID BH421 Type Tip Depth & RL 2.50 m 13.61 m AHD Installation Date 06-10-18
CC		0.0	16.11		CONCRETE	
			0.23			
			15.88		SANDY GRAVEL	
		0.5	0.60			
HA			15.51		SAND	
			1.00			
		1.0	15.11		SAND	
		1.5				
PT	GWNE	2.0				
			2.20			
			13.91		SAND	
			2.40			
		2.5	13.71			
			2.60			
			13.51			
		3.0				
			3.20			
			12.91		END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED Soil Vapour Probe Installed	
		3.5				
		4.0				
		4.5				
		5.0				



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GAP gINT FN. F17
RL1

GAP 8_16.6 LIB.GLB Log GAP WELL 3 SYDNEY METRO.GPJ <<DrawingFile>> 14-12-2018 16:30 8.30.004 Datgel Tools

FINAL REPORT OF BOREHOLE: SRT_BH422

SHEET: 1 OF 1

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333556.8 m E 6247788.8 m N MGA94 56
SURFACE RL: 16.42 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 3.20 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: TA + PK DATE: 7-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	16.42					CONCRETE			
				0.31								
ADT	H			16.11					FILL: GRAVEL medium to coarse grained, angular, grey, trace fine to coarse grained sand	W		road base
			0.5	*0.50*								
HA		GWNE		15.92	BH422_0.5 0.50 m R = 0A PID = 0.2 ppm				SAND fine to medium grained, dark grey, with silt			NATURAL
				0.80								
				15.62					: as above grey/white, no silt			
			1.0		BH422_1.0 1.00 m QCA103/QCB103 R = 0A PID = 0.2 ppm							
				1.40								
				15.02					: as above becoming grey with brown			
PT			1.5		BH422_1.5 1.50 m R = 0A PID = 0.5 ppm							
				1.80								
	L			14.62					: as above becoming black	D - M		
			2.0		BH422_2.0 2.00 m R = 0A PID = 0.4 ppm							
				2.10								
				14.32					: as above becoming grey/white			
			2.5									
			3.0		BH422_3.0 3.00 m R = 0A PID = 0.4 ppm							
				13.22					END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED Soil Vapour Probe Installed			
			3.5									
			4.0									
			4.5									
			5.0									

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GAP gINT FN. F01a
RL3

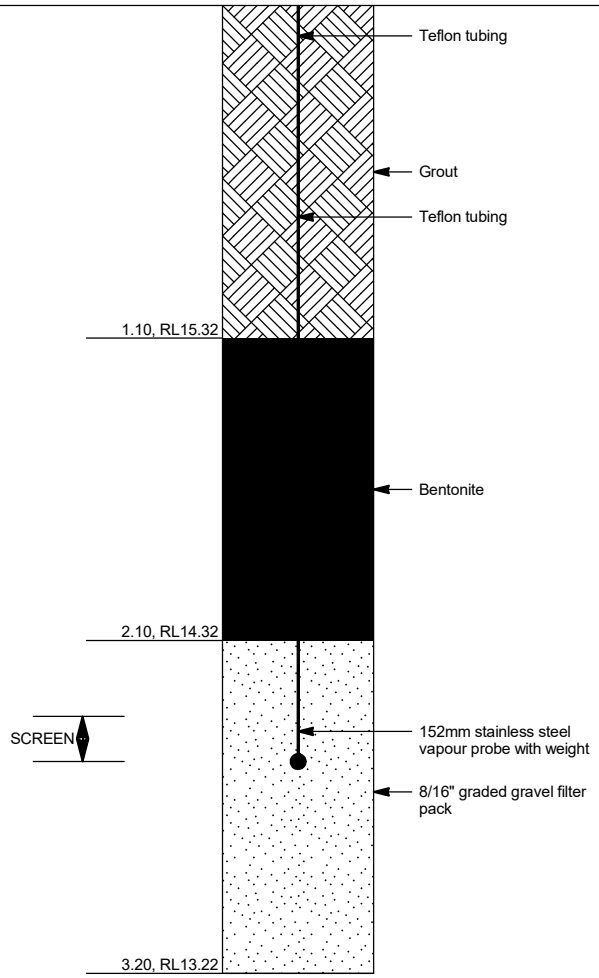
GAP 8_16.6 LIB.GLB Log GAP NON-CORED FULL PAGE SYDNEY METRO.GPJ <<DrawingFile>> 14-12-2018 16:28 8.30.004 Datgel Tools

GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH422

SHEET: 1 OF 1

CLIENT:	TfNSW	COORDS: 333556.8 m E 6247788.8 m N MGA94 56	DRILL RIG: Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL: 16.42 m DATUM: AHD	CONTRACTOR: Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°	LOGGED: TA + PK DATE: 7-10-18
JOB NO:	1791865	HOLE DEPTH: 3.20 m	CHECKED: BH DATE: 14-12-18

Drilling				Field Material Description		Instrumentation Details			
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	ID	Type	Tip Depth & RL	Installation Date
						BH422		2.50 m 13.92 m AHD	
CC		0.0	16.42		CONCRETE				
			0.31						
ADT			16.11		GRAVEL				
		0.5	0.50						
HA			15.92		SAND				
			0.80						
			15.62						
		1.0							
			1.40						
	GWNE		15.02						
PT		1.5							
			1.80						
			14.62						
		2.0							
			2.10						
			14.32						
		2.5							
		3.0							
			3.20						
			13.22		END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED Soil Vapour Probe Installed				
		3.5							
		4.0							
		4.5							
		5.0							



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GAP gINT FN. F17
RL1

GAP 8_16.6 LIB.GLB Log GAP WELL 3 SYDNEY METRO.GPJ <<DrawingFile>> 14-12-2018 16:30 8.30.004 Datgel Tools

FINAL REPORT OF BOREHOLE: SRT_BH423

SHEET: 1 OF 2

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333550.1 m E 6247802.5 m N MGA94 56
SURFACE RL: 16.42 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 7.45 m

DRILL RIG: Commachio
CONTRACTOR: Ground Test
LOGGED: RB DATE: 14-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	16.42					CONCRETE			
				0.36								
HA	H			16.06					FILL: SAND fine to coarse grained, poorly sorted, brown grey, with fine to medium grained gravel			Fragments of brick
			0.5		BH423_0.5 0.50 m R = 1A PID = 2.1 ppm						D - VD	
				1.00								
			1.0	15.42	BH423_1.0 1.00 m R = 0A PID = 2 ppm				SAND fine grained, well sorted, brown grey, with silt		L - VL	NATURAL
			1.5		BH423_1.5 1.50 m R = 0A PID = 1.5 ppm							
				1.70								
SPT				14.72					SAND fine grained, uniform, pale brown			
			2.0		BH423_2.0 2.00 m R = 0A PID = 1.2 ppm						L	
				2.30						M		
				14.12					: as above dark brown with some silt		MD	
				2.50								
			2.5	13.92					: as above grey brown			
	L			*2.90*								
				13.52					: as above pale brown		L - MD	
			3.0		BH423_3.0 3.00 m R = 0A PID = 1.4 ppm							
				3.40								
				13.02					: as above brown with some silt			
ADV		▽	3.5								MD	
			4.0		BH423_4.0 4.00 m R = 0A PID = 0.5 ppm							
				4.15								
SPT				12.27					: as above pale grey white, fine to medium grained			
			4.5							W	L - MD	
ADV												
			5.0									

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GAP gINT FN. F01a
RL3

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FINAL REPORT OF BOREHOLE: SRT_BH423

SHEET: 2 OF 2

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333550.1 m E 6247802.5 m N MGA94 56
SURFACE RL: 16.42 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 7.45 m

DRILL RIG: Commachio
CONTRACTOR: Ground Test
LOGGED: RB DATE: 14-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADV	L		5.0						SAND fine grained, uniform, pale brown	W	L - MD	NATURAL
			5.5									
			6.0									
			6.5									
				6.80 9.62								
SPT			7.0		BH423_7.0 7.00 m R = 0A				CLAY high plasticity, pale grey with mottled orange	M	St - VSt	
			7.5	8.97					END OF BOREHOLE @ 7.45 m TARGET DEPTH REACHED			
			8.0									
			8.5									
			9.0									
			9.5									
			10.0									

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FINAL REPORT OF BOREHOLE: SRT_BH424

SHEET: 1 OF 1

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333526.9 m E 6247810.5 m N MGA94 56
SURFACE RL: 16.48 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 3.20 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: RB DATE: 27-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	16.48					CONCRETE			
				0.50								
HA	H		0.5	15.98	BH424_0.5 DS 0.50 m QCA108 / QCB108 R = 1A PID = 0.7 ppm				FILL: Gravelly SAND fine to coarse grained, brown, fine to medium grained gravel		MD	Trace sandstone, gravels and charcoal Some pockets of clay
				0.90								
			1.0	15.58	BH424_1.0 DS 1.00 m R = 1A PID = 0.1 ppm				FILL: SAND fine to coarse grained, well sorted, grey brown, with gravel			Trace charcoal
				1.20								
				15.28					SAND fine to medium grained, uniform, grey brown			NATURAL
			1.5		BH424_1.5 U 1.50 m R = 0A PID = 0 ppm							
				1.70								
				14.78					SAND fine to medium grained, uniform, dark brown, with silt	M		
				2.00								
PT	L	GWNE	2.0	14.48	BH424_2.0 U 2.00 m R = 0A PID = 0.8 ppm				SAND fine to medium grained, uniform, grey brown		L	
			2.5									
				2.80								
				13.68					: as above becoming pale grey			
			3.0		BH424_3.0 U 3.00 m R = 0A PID = 0.5 ppm							
				13.28					END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED			
			3.5									
			4.0									
			4.5									
			5.0									

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FINAL REPORT OF BOREHOLE: SRT_BH425

SHEET: 1 OF 1

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333527.4 m E 6247821.5 m N MGA94 56
SURFACE RL: 16.74 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 3.20 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: RB DATE: 13-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	16.74					CONCRETE			
				0.13								
				0.20	BH425_0.15				FILL: Gravelly SAND	M	D - VD	Fragments of tile, ceramic, concrete and bricks
				16.54	DS 0.15 m				fine to coarse grained, poorly sorted, dark brown			>80% crushed sandstone and brick from 0.2m-0.4m
					R = 1A							
					PID = 0.8 ppm				FILL: Sandy GRAVEL	D - M	VD	
				0.40					pale brown orange			
				16.34	BH425_0.4				FILL: Gravelly SAND			Coal tar odour/chemical odour
	H		0.5		DS 0.40 m				fine to coarse grained, black, angular gravel			Fragments of brick and ash
					R = 1C							
					PID = 57.9 ppm					D	D	
					BH425_0.5							
					DS 0.50 m							
				0.80	R = 1B							
HA				15.94	PID = 25.7 ppm				SAND			NATURAL
									fine to medium grained, uniform, orange brown			
				1.00								
			1.0	15.74	BH425_1.0				: as above pale grey brown			
	L-M				DS 1.00 m							
					R = 0A							
					PID = 3.9 ppm					M		
			1.5									
					BH425_1.5							
					U 1.50 m							
					R = 0A							
				1.70	PID = 5.7 ppm							
				15.04					Silty SAND			
									fine to medium grained, uniform, brown			
				2.00							MD - L	
			2.0	14.74	BH425_2.0				SAND			
					U 2.00 m				fine to medium grained, uniform, pale brown			
					R = 0A							
					PID = 0.9 ppm							
PT	L	GWNE										
				2.50								
			2.5	14.24	BH425_2.5				: as above pale grey yellow			
					U 2.50 m					W		
					R = 0A							
					PID = 0.8 ppm							
			3.0									
					BH425_3.0							
					U 3.00 m							
					R = 0A							
					PID = 1 ppm							
				13.54					END OF BOREHOLE @ 3.20 m			
									TARGET DEPTH REACHED			
			3.5									
			4.0									
			4.5									
			5.0									

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FINAL REPORT OF BOREHOLE: SRT_BH426

SHEET: 1 OF 2

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333547.3 m E 6247821.8 m N MGA94 56
SURFACE RL: 16.58 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 6.00 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: TA + PK DATE: 7-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC	H		0.0	16.58 *0.10*					CONCRETE			
HA	L-H			16.48	BH426_0.1 0.10 m R = 1A PID = 0.4 ppm				FILL: Gravelly SAND fine to coarse grained, brown, sub-rounded to sub-angular gravel, trace silt			anthropogenic material (approx 2-8%): terracotta, brick, concrete, glass fragments, old bolts and nuts
ADV			0.5		BH426_0.5 0.50 m R = 1A PID = 0.3 ppm							
				0.80 15.78					SAND fine to medium grained, dark brown, trace fines			NATURAL
HA			1.0		BH426_1.0 1.00 m R = 0A PID = 0.4 ppm							
			1.5		BH426_1.5 1.50 m R = 0A PID = 0.4 ppm							terracotta fragment (potentially collapse from upper fill profile)
				1.80 14.78					: as above no fines	D		
			2.0	*2.00* 14.58	BH426_2.0 2.00 m R = 0A PID = 0.5 ppm				: as above pale grey/yellow			
PT	L		2.5									
			3.0		BH426_3.0 3.00 m R = 0A PID = 0.6 ppm							
		▽	3.5							M		
			4.0		BH426_4.0 4.00 m R = 0A PID = 0.5 ppm					W		
			4.5									
			5.0									

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FINAL REPORT OF BOREHOLE: SRT_BH426

SHEET: 2 OF 2

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333547.3 m E 6247821.8 m N MGA94 56
SURFACE RL: 16.58 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 6.00 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: TA + PK DATE: 7-10-18
CHECKED: BH DATE: 14-12-18

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
PT	L		5.0		BH426_5.0 5.00 m R = 0A PID = 0.7 ppm				SAND fine to medium grained, dark brown, trace fines	W		NATURAL
			6.0	10.58					END OF BOREHOLE @ 6.00 m TARGET DEPTH REACHED Groundwater Well Installed			
			6.5									
			7.0									
			7.5									
			8.0									
			8.5									
			9.0									
			9.5									
			10.0									

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GAP gINT FN. F01a
RL3

GAP 8_16.6 LIB.GLB Log GAP NON-CORED FULL PAGE SYDNEY METRO.GPJ <<DrawingFile>> 14-12-2018 16:28 8.30.004 Datgel Tools

GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH426

SHEET: 1 OF 2

CLIENT:	TfNSW	COORDS:	333547.3 m E 6247821.8 m N MGA94 56	DRILL RIG:	Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL:	16.58 m DATUM: AHD	CONTRACTOR:	Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION:	-90°	LOGGED: TA + PK	DATE: 7-10-18
JOB NO:	1791865	HOLE DEPTH:	6.00 m	CHECKED: BH	DATE: 14-12-18

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	
CC		0.0	16.58			
			0.10		CONCRETE	
HA			16.48		GRAVELLY SAND	
ADV		0.5				
			0.80			
			15.78		SAND	
HA		1.0				Grout
		1.5				uPVC class 18 50mm casing
			1.80			
			14.78			
			2.00			2.00, RL14.58
		2.0	14.58			
		2.5				Bentonite
						3.00, RL13.58
PT		3.0				
		3.5				
		4.0				Filter pack 8/16" graded gravel
		4.5				Pre pack 50mm slotted screen
		5.0				

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GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH426

SHEET: 2 OF 2

CLIENT:	TfNSW	COORDS: 333547.3 m E 6247821.8 m N MGA94 56	DRILL RIG: Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL: 16.58 m DATUM: AHD	CONTRACTOR: Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°	LOGGED: TA + PK DATE: 7-10-18
JOB NO:	1791865	HOLE DEPTH: 6.00 m	CHECKED: BH DATE: 14-12-18

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	*DEPTH* RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	
PT		5.0			SAND	
		5.5				
		6.0	*6.00* 10.58		END OF BOREHOLE @ 6.00 m TARGET DEPTH REACHED Groundwater Well Installed	6.00, RL10.58 End cap
		6.5				
		7.0				
		7.5				
		8.0				
		8.5				
		9.0				
		9.5				
		10.0				

This report of standpipe installation must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

GAP 8_16.6 LIB.GLB Log GAP WELL 3 SYDNEY METRO.GPJ <<DrawingFile>> 14-12-2018 16:30 8.30.004 Datgel Tools

APPENDIX F

Groundwater Development Records

MONITORING WELL DEVELOPMENT RECORD

Golder Associates

PROJECT Waterloo Stn **DATE** 14/10/18

PROJ. NUMBER 1791865 **CONTRACTOR**

GOLDER STAFF R.B **MON. WELL NAME** NE corner of church

WEATHER (Temp/Cloud Cover/Precip.) 20°C, overcast

DEVEL. METHOD Waterra footvalve + HDPE tubing

CALCULATION OF MINIMUM DEVELOPMENT VOLUME

All depths measured below top of PVC casing (TOC)

Time	Depth to Water (m) A	Measured Depth of Well (m) B	Depth of Well *from TOC*, from Mon. Well Report Sheet (m) C	Metres of Standing Water D = B - A or C - A, whichever is the greater	1 Well Casing Volume (assuming 50 mm casing) (L) E = D x 2.0	Min. Total Volume to be Pumped during Development (L) F = E x 10
12:10	3.96	4.96	-	1.0	2.0	20

DEVELOPMENT RECORDS

Field Measurements

Time	Cumulative Vol. Purged (L)	Cumulative No. of Surge Cycles	Redox (mV)	pH	Temp (C)	Conductivity (µS/cm)	Appearance (Colour/Clarity)	Odour
12:28	5						brown grey, vh turbidity	none
		DRY						

Final Measured Depth of Well from TOC (m) 5.88 Water level 5.76

MONITORING WELL DEVELOPMENT RECORD

Golder Associates

PROJECT Waterloo Stn **DATE** 14/10/18

PROJ. NUMBER 1791865 **CONTRACTOR**

GOLDER STAFF RB **MON. WELL NAME** SW of church

WEATHER (Temp/Cloud Cover/Precip.)

DEVEL. METHOD Waterra Footvalve + LOPE tubing

CALCULATION OF MINIMUM DEVELOPMENT VOLUME

All depths measured below top of PVC casing (TOC)

Time	Depth to Water (m) A	Measured Depth of Well (m) B	Depth of Well *from TOC*, from Mon. Well Report Sheet (m) C	Metres of Standing Water D = B - A or C - A, whichever is the greater	1 Well Casing Volume (assuming 50 mm casing) (L) E = D x 2.0	Min. Total Volume to be Pumped during Development (L) F = E x 10
1:38	4.33	7.57		3.24	6.48	64.8

DEVELOPMENT RECORDS ~92 cm stick up - Logger in well

Field Measurements

Time	Cumulative Vol. Purged (L)	Cumulative No. of Surge Cycles	Redox (mV)	pH	Temp (C)	Conductivity (µS/cm)	Appearance (Colour/Clarity)	Odour
1:48	10						brown, grey, h turbidity	none
1:55	20						" " " "	"

Final Measured Depth of Well from TOC (m) 7.52

MONITORING WELL DEVELOPMENT RECORD

Golder Associates

PROJECT: Waterloo Stn
DATE: 28/10/18
PROJ. NUMBER: 1791865
CONTRACTOR:
GOLDER STAFF: R.B
MON. WELL NAME: BH409
WEATHER (Temp/Cloud Cover/Precip.): Overcast, ~19°C
DEVEL. METHOD: Waterra footvalve + HDPE tubing

CALCULATION OF MINIMUM DEVELOPMENT VOLUME

All depths measured below top of PVC casing (TOC)

Time	Depth to Water (m) A	Measured Depth of Well (m) B	Depth of Well *from TOC*, from Mon. Well Report Sheet (m) C	Metres of Standing Water D = B - A or C - A, whichever is the greater	1 Well Casing Volume (assuming 50 mm casing) (L) E = D x 2.0	Min. Total Volume to be Pumped during Development (L) F = E x 10
12:25	3.73	5.68		1.95	3.9	39

DEVELOPMENT RECORDS

Field Measurements

Time	Cumulative Vol. Purged (L)	Cumulative No. of Surge Cycles	Redox (mV)	pH	Temp (C)	Conductivity (µS/cm)	Appearance (Colour/Clarity)	Odour
12:34	10						Grey brown, v.h turbidity	none
12:38	20						" " " "	"
12:42	30						" " " "	"
12:47	40						" " " "	"
12:51	50						" " " "	"
12:57	60						" " " "	"

Final Measured Depth of Well from TOC (m): 5.69

MONITORING WELL DEVELOPMENT RECORD

Golder Associates

PROJECT Waterloo Stn **DATE** 25/10/18

PROJ. NUMBER 1791865 **CONTRACTOR** Well installed by BG Drilling

GOLDER STAFF R. Borath **MON. WELL NAME** SRT-BH419

WEATHER (Temp/Cloud Cover/Precip.) Overcast, 16°C

DEVEL. METHOD Waterra footvalve + LDPE tubing

CALCULATION OF MINIMUM DEVELOPMENT VOLUME

All depths measured below top of PVC casing (TOC)

Time	Depth to Water (m) A	Measured Depth of Well (m) B	Depth of Well *from TOC*, from Mon. Well Report Sheet (m) C	Metres of Standing Water D = B - A or C - A, whichever is the greater	1 Well Casing Volume (assuming 50 mm casing) (L) E = D x 2.0	Min. Total Volume to be Pumped during Development (L) F = E x 10
7:10	3.71	6.00	—	2.29	4.58	45.8

DEVELOPMENT RECORDS

Field Measurements

Time	Cumulative Vol. Purged (L)	Cumulative No. of Surge Cycles	Redox (mV)	pH	Temp (C)	Conductivity (µS/cm)	Appearance (Colour/Clarity)	Odour
7:17	10						Brown grey, v.h. turbidity	none, sandy
7:22	20						" " " "	" "
7:27	30						" " " "	" "
7:31	40						" " " "	" "
7:36	50						" " " "	" "

Final Measured Depth of Well from TOC (m) 6.35 mTOC

Water level 3.73 mTOC

MONITORING WELL DEVELOPMENT RECORD

Golder Associates

PROJECT Waterloo Sth **DATE** 28/10/18

PROJ. NUMBER 1791865 **CONTRACTOR**

GOLDER STAFF RB + TM **MON. WELL NAME** BH420

WEATHER (Temp/Cloud Cover/Precip.) Overcast, ~19°C

DEVEL. METHOD Waterra footvalve + LDPE tubing

CALCULATION OF MINIMUM DEVELOPMENT VOLUME

All depths measured below top of PVC casing (TOC)

Time	Depth to Water (m) A	Measured Depth of Well (m) B	Depth of Well *from TOC*, from Mon. Well Report Sheet (m) C	Metres of Standing Water D = B - A or C - A, whichever is the greater	1 Well Casing Volume (assuming 50 mm casing) (L) E = D x 2.0	Min. Total Volume to be Pumped during Development (L) F = E x 10
2:30	3.85	~5.93		2.08	4.16	41.6

DEVELOPMENT RECORDS

Field Measurements

Time	Cumulative Vol. Purged (L)	Cumulative No. of Surge Cycles	Redox (mV)	pH	Temp (C)	Conductivity (µS/cm)	Appearance (Colour/Clarity)	Odour
2:40	10		184.3	6.80	22.1	585	brown, h. turbidity	none
2:45	20		157.4	6.21	22.0	513	" " "	"
2:51	30		145.5	5.95	"	458	" , m "	"
2:57	40		136.9	5.92	22.1	428.7	" , l-m "	"

Final Measured Depth of Well from TOC (m) 5.93

MONITORING WELL DEVELOPMENT RECORD

Golder Associates

PROJECT Waterloo Stn **DATE** 14/10/18

PROJ. NUMBER 1791865 **CONTRACTOR**

GOLDER STAFF RB **MON. WELL NAME** BH426

WEATHER (Temp/Cloud Cover/Precip.) 17°C, raining

DEVEL. METHOD waterra footvalve + LOPE tubing

CALCULATION OF MINIMUM DEVELOPMENT VOLUME

All depths measured below top of PVC casing (TOC)

Time	Depth to Water (m) A	Measured Depth of Well (m) B	Depth of Well *from TOC*, from Mon. Well Report Sheet (m) C	Metres of Standing Water D = B - A or C - A, whichever is the greater	1 Well Casing Volume (assuming 50 mm casing) (L) E = D x 2.0	Min. Total Volume to be Pumped during Development (L) F = E x 10
8:20	3.70	5.92		2.22	4.44	44.4

DEVELOPMENT RECORDS

Field Measurements

Time	Cumulative Vol. Purged (L)	Cumulative No. of Surge Cycles	Redox (mV)	pH	Temp (C)	Conductivity (µS/cm)	Appearance (Colour/Clarity)	Odour
8:38	10						brown, v h turbidity	none
8:44	20						red brown, h turbidity	"
8:50	30						" " m-h "	"
8:56	40						" " " "	"
9:00	45						" " " "	"

Final Measured Depth of Well from TOC (m) 5.92

Water level 3.71 mTOC

APPENDIX G

Soil Vapour Records

Soil Gas Monitoring (Summa Canister)

Golder Associates

Project No: 1791865

Client: Trans f. NSW.

Site Address: Waterloo Station.

Location ID: SRT_BH408

Date: 21/10/18

Field Personnel: PK

Sample Media	Sample ID	Canister ID	Regulator ID	Regulator Flow Rate
Primary	SRT_BH408	#1319 cert. 17/10/18	#024 cert. 17/10/18	60 ml/min
Duplicate / Triplicate		# cert.	# cert.	ml/min

Equipment	ID/Serial No	Calibration Date
PID:	18106765	18/10/18
SKC Pump:	510844	16/11/17
Rotameter:	121727	17/3/18
Helium Detector:	04880	5/2/18
Landfill Gas Meter:	10479	19/10/18

Meterological Conditions:

Ambient Temp: 16 °C

Barometric Pressure: 1016 mbar ~~kPa~~

Relative Humidity: 86 %

Rain: (Dry) / Light / Heavy

Comments N/A.

Field Parameters and Leak Detection

	Sample Line	
	Pre- Sample	Post- Sample
PID (ppm)	0.5	0.0
CH4 %	0.0	0.0
CO2 %	0.8	0.8
O2 %	17.4	17.4
~~LEL~~ Balance %	0.0	0.0
CO (ppm)	0	0
H2S (ppm)	1	0
He (ppm / %)	0.0	0.0

Initial He Concentration in Shroud 64.0 %

Pre Sample Check

Vacuum Check: No vac.

Water Present in Line? Yes / (No)

Purging ☑ See Calculation Sheet

Sample Train Volume: _____ L

Purge volume (3x train): _____ L

Purge Rate: 216 ml/min

Purge Time (mins): 3 mins

Purge completed: (Yes) / No

Sampling Data

Time	Summa Canister Vacuum (Hg) Primary Sample	Summa Canister Vacuum (Hg) Duplicate/Triplicate	Helium in Shroud %
Start Time: 8:48	-30		13.3
8:53	-24		24.8
8:58	-18		34.4
9:03	-11		13.7
9:08	-6		12.5
Stop time: 9:08	Final: -6	Final:	

Total Sample Run-time: 20 min.

Notes

Soil Gas Monitoring (Summa Canister)

Golder Associates

Project No: 1791865
Client: T. f.NSW
Site Address: Waterloo Station

Location ID: SRT - BH421
Date: 21/10/18
Field Personnel: PK.

Sample Media	Sample ID	Canister ID	Regulator ID	Regulator Flow Rate
Primary	SRT_BH421	# 1098 cert. 17/10/18	# 035 cert. 17/10/18	60 ml/min
Duplicate / Triplicate		# cert.	# cert.	ml/min

Equipment	ID/Serial No	Calibration Date
PID:	18106765	18/10/18
SKC Pump:	510844	16/11/17
Rotameter:	121727	17/3/18
Helium Detector:	041880	5/2/18
Landfill Gas Meter:	10479	19/10/18

Meterological Conditions:

Ambient Temp: 16 °C
Barometric Pressure: 1017 ~~kPa~~ mbar
Relative Humidity: 82 %
Rain: (Dry) / Light / Heavy
Comments N/A.

Field Parameters and Leak Detection

	Sample Line	
	Pre- Sample	Post- Sample
PID (ppm)	0.0	0.0
CH4 %	0.0	0.0
CO2 %	0.8	0.8
O2 %	15.0	15.0
LEL ~~Balance~~ %	0.0	0.0
CO (ppm)	0	0
H2S (ppm)	1	1
He (ppm / %)	0 ppm.	0 ppm

Initial He Concentration in Shroud 39.0 %

Pre Sample Check

Vacuum Check: No vac.
Water Present in Line? Yes / (No)

Purging ☐ See Calculation Sheet

Sample Train Volume: _____ L
Purge volume (3x train): _____ L
Purge Rate: 216 ml/min
Purge Time (mins): 3 mins
Purge completed: (Yes) / No

Sampling Data

Time	Summa Canister Vacuum (Hg) Primary Sample	Duplicate/Triplicate	Helium in Shroud %
Start Time: 9:55	-27		11.7 ↑
10:00	-20		16.3 ↑
10:05	-14		34.3 ↑
10:10	-7		29.2 ↑
10:12	-5		41.4
Stop time: 10:12	Final: -5	Final:	

Total Sample Run-time: 18

Notes

Soil Gas Monitoring (Summa Canister)

Golder Associates

Project No: 1791865
Client: T.f. NSW
Site Address: Waterloo Station

Location ID: SRT_BH422
Date: 21/10/18
Field Personnel: PR

Sample Media	Sample ID	Canister ID	Regulator ID	Regulator Flow Rate
Primary	SRT_BH422	# 1296 cert. 17/10/18	# 078 cert. 17/10/18	60 ml/min
Duplicate / Triplicate		# cert.	# cert.	ml/min

Equipment	ID/Serial No	Calibration Date
PID:	18106765	18/10/18
SKC Pump:	510844	16/11/17
Rotameter:	121727	17/3/18
Helium Detector:	041880	5/2/18
Landfill Gas Meter:	10479	19/10/18

Meterological Conditions:

Ambient Temp: 17 °C
Barometric Pressure: 1018 mbar ~~kPa~~
Relative Humidity: 77 %
Rain: (Dry) / Light / Heavy
Comments N/A.

Field Parameters and Leak Detection

	Sample Line	
	Pre- Sample	Post- Sample
PID (ppm)	0.0	0.0
CH4 %	0.0	0.0
CO2 %	0.9	0.9
O2 %	14.6	14.6
LEL ~~Balance~~ %	0.0	0.0
CO (ppm)	1	1
H2S (ppm)	1	1
He (ppm / %)	0	0

Initial He Concentration in Shroud 63.1 %

Pre Sample Check

Vacuum Check: No Vac
Water Present in Line? Yes / (No)

Purging ☐ See Calculation Sheet

Sample Train Volume: _____ L
Purge volume (3x train): _____ L
Purge Rate: 216 ml/min
Purge Time (mins): 3 mins
Purge completed: (Yes) / No

Sampling Data

Time	Summa Canister Vacuum (Hg) Primary Sample	Duplicate/Triplicate	Helium in Shroud %
Start Time: 10:50	-30		37.7
10:55	-24		51.5
11:00	-15		57.8
11:05	-10		54.7
11:10	-5		37.9
Stop time: 11:10	Final: -5	Final:	

Total Sample Run-time: 20 min.

Notes

Soil Gas Monitoring (Summa Canister)

Golder Associates

Project No: 1791865

Client: T.f. NCW

Site Address: Waterloo Station

Location ID: SRT_BH415

Date: 21/10/18

Field Personnel: PK

Sample Media	Sample ID	Canister ID	Regulator ID	Regulator Flow Rate
Primary	SRT_BH415	# 710 cert. 17/10/18	# 121 cert. 17/10/18	60 ml/min
Duplicate / Triplicate	QC100/~~QC200~~ QC200	# 1315 (1691) cert. 17/10/18 (3/9/18)	# 121 (636) cert. 17/10/18 (–)	60 (~60) ml/min

Equipment	ID/Serial No	Calibration Date
PID:	18106765	18/10/18
SKC Pump:	510844	16/11/17
Rotameter:	121727	17/3/18
Helium Detector:	041880	5/2/18
Landfill Gas Meter:	10479	19/10/18

Meterological Conditions:

Ambient Temp: 17 °C

Barometric Pressure: 1018 mbar ~~kPa~~

Relative Humidity: 73 %

Rain: (Dry) / Light / Heavy

Comments

Field Parameters and Leak Detection

	Sample Line	
	Pre- Sample	Post- Sample
PID (ppm)	0	0
CH4 %	0.0	0.0
CO2 %	2.3	2.3
O2 %	11.9	12.0
LEL ~~Balance~~ %	0.0	0.6
CO (ppm)	3	3
H2S (ppm)	1	1
He (ppm / %)	0	0

Initial He Concentration in Shroud 67.8 %

Pre Sample Check

Vacuum Check: No vac.

Water Present in Line? Yes / (No)

Purging ☐ See Calculation Sheet

Sample Train Volume: _____ L

Purge volume (3x train): _____ L

Purge Rate: 216 ml/min

Purge Time (mins): 3 mins

Purge completed: (Yes) / No

Sampling Data

Time	Summa Canister Vacuum (Hg) Primary Sample	DS Duplicate/Triplicate	TS	PS Helium in Shroud %	DS	TS
Start Time: 11:42	-30	12:03 -30	12:27 -29	57.7	46.7	21.9
11:47	-25	12:08 -26	12:32 -21	44.2	59.6	34.0
11:52	-20	12:13 -19	12:37 -16	54.7	40.6	24.0
11:57	-12	12:18 -10	12:42 -11	53.6	47.2	45.9
12:02	-6	12:23 -8	12:47 -6	36.2	33.4	27.2
Stop time: 12:02	Final: -6	Final: -8	-6			

Total Sample Run-time: _____ _____

Notes

Soil Gas Monitoring (Summa Canister)

Golder Associates

Project No: 1791865
Client: T.f. NSW.
Site Address: Waterloo Station

Location ID: SRT_BH416
Date: 21/10/18
Field Personnel: PK

Sample Media	Sample ID	Canister ID	Regulator ID	Regulator Flow Rate
Primary	SRT_BH416	# 1119 cert. 17/10/18	# 112 cert. 17/10/18	60 ml/min
Duplicate / Triplicate		# cert.	# cert.	ml/min

Equipment	ID/Serial No	Calibration Date
PID:	18106765	18/10/18
SKC Pump:	510844	16/11/17
Rotameter:	121727	17/3/18
Helium Detector:	041880	5/2/18
Landfill Gas Meter:	10479	19/10/18

Meterological Conditions:

Ambient Temp: 18 °C
Barometric Pressure: 1017 mbar ~~kPa~~
Relative Humidity: 66 %
Rain: (Dry) / Light / Heavy
Comments

Field Parameters and Leak Detection

	Sample Line	
	Pre- Sample	Post- Sample
PID (ppm)	0	0
CH4 %	0.0	0.0
CO2 %	1.3	1.3
O2 %	11.0	11.0
LEL ~~Balance~~ %	0.0	0.0
CO (ppm)	1	3
H2S (ppm)	2	2
He (ppm / %)	0	0

Initial He Concentration in Shroud 56.9 %

Pre Sample Check

Vacuum Check: No Vac
Water Present in Line? Yes / (No)

Purging ☐ See Calculation Sheet

Sample Train Volume: L
Purge volume (3x train): L
Purge Rate: 216 ml/min
Purge Time (mins): 3 mins
Purge completed: (Yes) / No

Sampling Data

Time	Summa Canister Vacuum (Hg) Primary Sample	Duplicate/Triplicate	Helium in Shroud %
Start Time: 13:11	-26		56.7
13:16	-22		46.6
13:21	-19		43.1
13:26	-15		33.4
13:31	-11		23.7
13:34	-9		30.4
Stop time: 13:34	Final: -9	Final:	

Total Sample Run-time: 23

Notes

Soil Gas Monitoring (Summa Canister)

Golder Associates

Project No: 1791865 **Location ID:** SRT_BH417

Client: Tr. f. NSW Date: 21/10/18

Site Address: Waterloo Station Field Personnel: PK

Sample Media	Sample ID	Canister ID	Regulator ID	Regulator Flow Rate
Primary	SRT_BH417	# 1102 cert. 17/10/18	# 102 cert. 17/10/18	60 ml/min
Duplicate / Triplicate		# cert.	# cert.	ml/min

Equipment	ID/Serial No	Calibration Date
PID:	18106765	18/10/18
SKC Pump:	510844	16/11/17
Rotameter:	121727	17/3/18
Helium Detector:	041880	5/2/18
Landfill Gas Meter:	10479	19/10/18

Meterological Conditions:

Ambient Temp: 19 °C

Barometric Pressure: 1016 mbar ~~kPa~~

Relative Humidity: 63 %

Rain: (Dry) / Light / Heavy

Comments

Field Parameters and Leak Detection

	Sample Line	
	Pre- Sample	Post- Sample
PID (ppm)	0	0
CH4 %	0.0	0.0
CO2 %	1.4	1.4
O2 %	12.2	12.3
LEL ~~Balance~~ %	0.0	0.0
CO (ppm)	1	3
H2S (ppm)	2	2
He (ppm / %)	0	0

Initial He Concentration in Shroud 58.9 %

Pre Sample Check

Vacuum Check: No Vac

Water Present in Line? Yes / (No)

Purging ☐ See Calculation Sheet

Sample Train Volume: L

Purge volume (3x train): L

Purge Rate: 216 ml/min

Purge Time (mins): 3 mins

Purge completed: (Yes) / No

Sampling Data

Time	Summa Canister Vacuum (Hg) Primary Sample	Duplicate/Triplicate	Helium in Shroud %
Start Time: 1401	-34		63.1
1406	-30		56.6
1411	-23		21.2
1416	-17		61.9
1421	-10		55.8
1426	-8		23.6
Stop time:	Final:	Final:	

Total Sample Run-time:

Notes

APPENDIX H

Calibration Certificates

Weekend #1

21/09/2018

Oil / Water Interface Meter

Instrument Geotech Interface Meter (30M)
Serial No. 4063

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
Connectors	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: Sarah Lian **Sarah Lian**

Calibration date: **21/09/2018**

Next calibration due: **20/11/2018**

weekend #1

PID Calibration Certificate

Instrument PhoCheck Tiger
Serial No. T-111092

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
Pump	Operation	✓	
	Filter	✓	
	Flow	✓	
	Valves, Diaphragm	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	PID	✓	10.6 ev
Alarms	Beeper	✓	Low: 50ppm; High: 100ppm; TWA: ; STEL:
	Settings	✓	
Software	Version	✓	
Data logger	Operation	✓	
Download	Operation	✓	
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Diffusion mode Aspirated mode

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No		Instrument Reading
PID Lamp		98 ppm isobutylene	NATA	SY137		97.4ppm

Calibrated by: Jerry Ji

Calibration date: 3/10/2018

Next calibration due: 1/04/2019

Weekend #2

12/10/2018

PID Calibration Certificate

Instrument PhoCheck Tiger
Serial No. T-111100

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
Pump	Operation	✓	
	Filter	✓	
	Flow	✓	
	Valves, Diaphragm	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	PID	✓	10.6 ev
Alarms	Beeper	✓	**Low** 50ppm / **High** 100ppm / **TWA** / **STEL**
	Settings	✓	
Software	Version	✓	
Data logger	Operation	✓	
Download	Operation	✓	
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No		Instrument Reading
PID Lamp		98ppm Isobutylene	NATA	SY137		98.9ppm

Calibrated by: SB. **Sophie Boler**

Calibration date: **12/10/2018**

Next calibration due: **11/11/2018**

Weekend # 3

17/10/18

Oil / Water Interface Meter

Instrument **Interface Meter (60M)**
Serial No. **312445**

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: Sarah Lian

Calibration date: **17/10/2018**

Next calibration due: **16/12/2018**

Weekend #3

19/10/2018

PID Calibration Certificate

Instrument PhoCheck Tiger
Serial No. T-113968

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
Pump	Operation	✓	
	Filter	✓	
	Flow	✓	
	Valves, Diaphragm	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	PID	✓	10.6ev
Alarms	Beeper	✓	**Low** / **High** / **TWA** / **STEL**
	Settings	✓	50ppm / 100ppm / N/A / N/A
Software	Version	✓	
Data logger	Operation	✓	
Download	Operation	✓	
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No		Instrument Reading
PID Lamp		98ppm Isobutylene	NATA	SY137		97.6ppm

Calibrated by: Sarah Lian **Sarah Lian**

Calibration date: **19/10/2018**

Next calibration due: **17/04/2019**

Gas Detection Air Sampling & Monitoring Environmental & Water Quality Monitoring
Air-Met Scientific Pty Ltd
ABN 73 006 849 949
1300 137 067
Melbourne: 7-11 Ceylon Street, Nunawading, VIC 3131 Ph 03 8878 3380 Fax 03 9877 1230
Sydney: Level 3, 18-26 Dickson Avenue Artarmon NSW 2064 Ph 02 8425 8388 Fax 02 8425 8399

Gas Calibration Certificate

Instrument **GFM430** **Sensors** **CH4, CO2, CO, O2, H2S, LEL**
Serial No. **10479**

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Pump	Operation	✓	
	Filter	✓	
	Flow	✓	
	Valves, Diaphragm	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	CH4	✓	
	CO2	✓	
	O2	✓	
	H2S	✓	
	CO	✓	
Alarms	Settings	✓	
Software	Version		
Datalogger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No	Instrument Reading
O2		20.9% Vol O2		Fresh Air	20.9%
CO2		40% CO2	NATA	SY136	39.1% CO2
CH4		60% CH4	NATA	SY136	60.2% CH4

Calibration Done By: Sarah Lian **Sarah Lian**

Calibration date: **19/10/2018**

Next calibration due: **20/04/2019**

SPX DIELECTRIC

MULTIGAS DETECTOR ATP-735 rev E

Certificate of Calibration

Name: Savita Chandak / Merlan Liew
Company: Air met Scientific PTY LTD
Customer No.: 05-001203
Phone No. +613-88783300

MGD P/N: 83219 Date: 5-2-2018

SN# 041880 Software Rev. 1.13

New ____ Repair X
Work order # 519032 SRA # M210042

Calibration conditions		Acceptable Range
Temperature	79	68-80 F
Humidity	29	<85%
Pump Vol.	1.10 L/min	.90 -1.20 l/min
Calibration point	**X = Complete**	
0%	X	Set point
2%	X	Set point
50%	X	Set point
100%	X	Set point
25 ppm (final check)	X	25 – 75 ppm
Attachment functionality	X	
Other	____	

Note: All test equipment used in manufacturing and repair is calibrated and traceable. Unless otherwise noted, the accuracy ratios are equal to or greater than 4:1.
Calibration Procedure used: MGD-2002 Helium Detector Calibration Procedure,
The 2% through 100% tests are performed with pre mixed (grade 5) helium with the remainder being nitrogen. Using a direct Siphon test method.
The 25ppm is performed as a final check as helium permeates a latex membrane.
The units upper reading limit is set at 100% a brief display of +100% is acceptable for a short duration (<10 sec) allowing for sensor stabilization.

Calibration performed by: Luc

RADIODETECTION
28 TOWER ROAD
RAYMOND, MAINE 04071
USA

TEL | 207 | 655 | 8525
TOLL FREE | 877 | 247 | 3797
FAX | 207 | 655 | 8535

rd.sales.us@spx.com

www.radiodetection.com

Gas Calibration Certificate

Instrument MX6
Serial No. 11102ZW-006
Sensors O2,LEL,PID

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments			
Battery	Charge Condition	✓				
	Fuses	✓				
	Capacity	✓				
	Recharge OK?	✓				
Switch/keypad	Operation	✓				
Display	Intensity	✓				
	Operation (segments)	✓				
Grill Filter	Condition	✓				
	Seal	✓				
Pump	Operation					
	Filter					
	Flow					
	Valves, Diaphragm					
PCB	Condition	✓				
Connectors	Condition	✓				
			Low	**High**	**TWA**	**STEL**
Sensor	O2	✓	19.50%	23.50%	N/A	N/A
	LEL	✓	5.00%	10.00%	N/A	N/A
	PID	✓	50ppm	100ppm	10ppm	25ppm
Alarms	Beeper	✓				
	Settings	✓				
Software	Version					
Datalogger	Operation					
Download	Operation					
Other tests:						

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Diffusion mode Aspirated mode

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No	Instrument Reading
O2		20.90%		Fresh Air	20.8%
LEL		50% LEL Methane	NATA	SY174	49.0%
PID		98ppm	NATA	SY137	97.1ppm

Calibrated by: Sarah Lian **Sarah Lian**

Calibration date: **18/10/2018**

Next calibration due: **16/04/2019**

Weekend #4

26/10/18

Oil / Water Interface Meter

Instrument Geotech Interface Meter (30M)
Serial No. 4000

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
Connectors	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: Sarah Lian **Sarah Lian**

Calibration date: **26/10/2018**

Next calibration due: **24/04/2019**

Weekend #4

26/10/2018

PID Calibration Certificate

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Instrument PhoCheck Tiger
Serial No. T-108801

Item	Test	Pass	Comments			
Battery	Charge Condition	✓				
	Fuses	✓				
	Capacity	✓				
	Recharge OK?	✓				
Switch/keypad	Operation	✓				
Display	Intensity	✓				
	Operation (segments)	✓				
Grill Filter	Condition	✓				
	Seal	✓				
Pump	Operation	✓				
	Filter	✓				
	Flow	✓				
	Valves, Diaphragm	✓				
PCB	Condition	✓				
Connectors	Condition	✓				
Sensor	PID	✓	10.6 ev			
Alarms	Beeper	✓	**Low**	**High**	**TWA**	**STEL**
	Settings	✓	50ppm	100ppm		
Software	Version	✓				
Data logger	Operation	✓				
Download	Operation	✓				
Other tests:						

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No		Instrument Reading
PID Lamp		98ppm Isobutylene	NATA	SY137		95.1ppm

Calibrated by: Sarah Lian

Calibration date: **26/10/2018**

Next calibration due: **27/04/2019**

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 10H100317

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 10.00		pH 10.00		320322	pH 9.72
1. pH 7.00		pH 7.00		307928	pH 6.92
2. pH 4.00		pH 4.00		316086	pH 4.13
3. mV		231.8mV		311901/311902	232mV
4. EC		2.76mS		306341	2.74mS
5. D.O		0.00ppm		10175	0.00ppm
6. Temp		21.4°C		MultiTherm	21°C

Calibrated by: Sarah Lian Sarah Lian

Calibration date: 26/10/2018

Next calibration due: 25/11/2018

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 10D101443

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 10.00		pH 10.00		320322	pH 9.75
2. pH 7.00		pH 7.00		317272	pH 6.89
3. pH 4.00		pH 4.00		320612	pH 3.94
4. mV		229.6mV		320334/321773	229.5mV
5. EC		2.76mS		320325	2.74mS
6. D.O		0.00ppm		10175	0.00ppm
7. Temp		22°C		MultiTherm	21.7°C

Calibrated by: Sarah Lian **Sarah Lian**

Calibration date: **1/11/2018**

Next calibration due: **1/12/2018**

APPENDIX I

Laboratory Based Information

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: Waterloo Station

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway St Leonards NSW	Purchase Order No:	
		Results Required Date:	5 day TAT
		Telephone:	0437 039 929
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

Fax:

Subcon / Forward Lab / Split WO
Lab / Analysis: ALS NC/Asbes, ALS Bns/Spa
Organised By / Date:
Relinquished By / Date:
Connote / Courier:
WO No:
Attached By PO / Internal Sheet:

Additional Report Formats

- ☐ NEPM
- ☐ CSV
- ☐ ESDAT
- ☐ DQO
- ☐ GO, Guidelines --------
- ☐ Others _____

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other____	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	EA200N (asbestos NEPM)	PFAS	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)	Notes/Guidelines/LOR/ Special instructions
1	SRT-BH420-0.5	6/10/2018	x			2			X	X		X	X	X						
2	SRT-BH420-1.0	6/10/2018	x			2			X											
3	SRT-BH420-2.0	6/10/2018	x			2		X	X											
4	SRT-BH420-3.0	6/10/2018	x			2	X										X			
5	SRT-BH420-1.0-1.45	6/10/2018	x			1	X													
6	SRT-BH420-2.5-2.95	6/10/2018	x			1	X													
7	SRT-BH420-4.0-4.45	6/10/2018	x			1											X			
8	SRT-BH420-5.5-5.95	6/10/2018	x			1											X			
9	SRT-BH420-7.0-7.45	6/10/2018	x			1	X													
10	SRT_BH408_0.2	6/10/2018	x			2			X					X						
11	SRT_BH408_0.5	6/10/2018	x			2			X	X	X	X	X							
12	SRT_BH408_1.0	6/10/2018	x			2														
13	SRT_BH408_1.5	6/10/2018	x			2					X									

Environmental Division
Sydney
Work Order Reference
ES1829955

Telephone : + 61-2-8784 8555

Relinquished By: Tegen Anning	Date/Time: 08/10/2018	Received By: FAO	Date/Time: 10/10/18 1pm
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10/10/2018)

ES1829955

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: Waterloo Station

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 / Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate) Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	EA200N (asbestos NEPM)	PFAS	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)
14	SRT_BH408_2.0	6/10/2018	x			2		X	X										
15	SRT_BH408_3.0	6/10/2018	x			2					X						X		
16	SRT_BH409_0.1	6/10/2018	x			2	X												
17	SRT_BH409_0.5	6/10/2018	x			2			X	X	X	X	X	X					
18	SRT_BH409_1.0	6/10/2018	x			2	X												
19	SRT_BH409_1.5	6/10/2018	x			2			X										
20	SRT_BH409_2.0	6/10/2018	x			2		X			X								
21	SRT_BH409_3.0	6/10/2018	x			2			X								X		
22	SRT_BH409_4.0	6/10/2018	x			2	X										X		
23	SRT_BH410_0.2	6/10/2018	x			2			X					X					
24	SRT_BH410_0.8	6/10/2018	x			2			X	X		X	X						
25	SRT_BH410_1.0	6/10/2018	x			2													
26	SRT_BH410_1.5	6/10/2018	x			2			X		X								
27	SRT_BH410_2.0	6/10/2018	x			1	X												

ANALYSIS REQUESTED

Additional Report Formats

- ☐ NEPM
- ☐ CSV
- ☐ ESDAT
- ☐ DQO
- ☐ GO, Guidelines ——————
- ☐ Others _____

Notes/Guidelines/LOR/ Special instructions

Relinquished By: Tegen Anning	Date/Time: 08/10/2018	Received By: TASI	Date/Time: 10/10/18 1pm
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10/10/2018)

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: Waterloo Station

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate)			NO. OF CONTAINERS	ANALYSIS REQUESTED														Additional Report Formats / Notes/Guidelines/LOR/ Special Instructions
			Soil Sample	Water Sample	Other_____		HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	EA200N (asbestos NEPM)	PFAS	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)		
28	SRT_BH410_3.0	6/10/2018	x			2	X										X				
29	SRT_BH411_0.15	6/10/2018	x			2	X							X							
30	SRT_BH411_0.5	6/10/2018	x			2			X	X		X	X								
31	SRT_BH411_1.0	6/10/2018	x			2			X												
32	SRT_BH411_1.5	6/10/2018	x			2	X														
33	SRT_BH411_2.0	6/10/2018	x			2			X												
34	SRT_BH411_3.0	6/10/2018	x			2	X										X				
35	SRT_BH412_0.11	6/10/2018	x			2				X		X	X								
36	SRT_BH412_0.5	6/10/2018	x			2			X					X							
37	SRT_BH412_1.0	6/10/2018	x			2			X	X		X	X	X							
38	SRT_BH412_1.5	6/10/2018	x			1	X														
39	SRT_BH412_2.0	6/10/2018	x			2		X	X												
40	SRT_BH412_3.0	6/10/2018	x			2	X										X				

Additional Report Formats: ☐ NEPM ☐ CSV ☐ ESDAT ☐ DQO ☐ GO, Guidelines ------- ☐ Others _____

Relinquished By: Tegen Anning	Date/Time: 08/10/2018	Received By: TADi	Date/Time: 10/10/18 1pm
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10/10/2018)

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: Waterloo Station

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	EA200N (asbestos NEPM)	PFAS	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)
41	SRT_BH416_0.25	7/10/2018	x			3			X		X			X					
42	SRT_BH416_0.5	7/10/2018	x			2			X	X		X	X						
43	SRT_BH416_1.0	7/10/2018	x			3					X			X					
44	SRT_BH416_1.5	7/10/2018	x			2			X										
45	SRT_BH416_2.0	7/10/2018	x			2	X												
46	SRT_BH416_3.0	7/10/2018	x			2			X		X						X		
47	SRT_BH417_0.2	7/10/2018	x			3	X												
48	SRT_BH417_0.5	7/10/2018	x			2			X	X	X	X	X	X					
49	SRT_BH417_1.5	7/10/2018	x			2			X			X	X						
50	SRT_BH417_2.0	7/10/2018	x			2		X			X								
51	SRT_BH417_3.0	7/10/2018	x			2			X		X						X		
52	SRT_BH421_0.25	6/10/2018	x			2				X				X					
53	SRT_BH421_0.5	6/10/2018	x			1 (jar)			X										

ANALYSIS REQUESTED

Additional Report Formats

- ☐ NEPM
- ☐ CSV
- ☐ ESDAT
- ☐ DQO
- ☐ GO, Guidelines _____
- ☐ Others _____

Notes/Guidelines/LOR/ Special instructions

Relinquished By: Tegen Anning	Date/Time: 08/10/2018	Received By: FAS	Date/Time: 10/10/18 1pm
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10/10/2018)

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: Waterloo Station

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 / Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	EA200N (asbestos NEPM)	PFAS	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)
54	SRT_BH421_1.0	6/10/2018	x			2			X										
55	SRT_BH421_1.5	6/10/2018	x			2	X												
56	SRT_BH421_2.0	6/10/2018	x			2	X	X											
57	SRT_BH421_3.0	6/10/2018	x			2			X						X		X		
58	SRT_BH422_0.5	7/10/2018	x			2			X	X		X	X	X					
59	SRT_BH422_1.0	7/10/2018	x			3			X										
60	SRT_BH422_1.5	7/10/2018	x			2			X										
61	SRT_BH422_2.0	7/10/2018	x			2	X	X											
62	SRT_BH422_3.0	7/10/2018	x			2			X								X		
63	SRT_BH426_0.1	7/10/2018	x			3			X		X			X					
64	SRT_BH426_0.5	7/10/2018	x			2				X		X	X						
65	SRT_BH426_1.0	7/10/2018	x			3			X		X	X	X						
66	SRT_BH426_1.5	7/10/2018	x			2	X												

ANALYSIS REQUESTED

Additional Report Formats

- ☐ NEPM
- ☐ CSV
- ☐ ESDAT
- ☐ DQO
- ☐ GO, Guidelines --------
- ☐ Others _____

Notes/Guidelines/LOR/ Special instructions

Relinquished By: Tegen Anning	Date/Time: 08/10/2018	Received By: TADS	Date/Time: 10/10/18 4pm
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10/10/2018)

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: Waterloo Station

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate)			NO. OF CONTAINERS	ANALYSIS REQUESTED													Additional Report Formats
			Soil Sample	Water Sample	Other____		HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	EA200N (asbestos NEPM)	PFAS	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)	☐ NEPM ☐ CSV ☐ ESDAT ☐ DQO ☐ GO, Guidelines -------- ☐ Others_____
67	SRT_BH426_2.0	7/10/2018	x			2		X	X											Notes/Guidelines/LOR/ Special instructions
68	SRT_BH426_3.0	7/10/2018	x			2	X	X												
69	SRT_BH426_4.0	7/10/2018	x			2			X								X			
70	SRT_BH426_5.0	7/10/2018	x			2	X										X			
71	RB100	6/10/2018		x		4			X	X	X	X	X							
72	RB103	7/10/2018		x		4			X	X	X	X	X							
73	QCA100	6/10/2018	x			1	X													
74	QCA101	6/10/2018	x			1			X	X	X	X	X	X						
75	QCA102	6/10/2018	x			1			X											
76	QCA103	7/10/2018	x			1			X											

Relinquished By: Tegen Anning	Date/Time: 08/10/2018	Received By: FAD;	Date/Time: 10/10/18 1pm
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10/10/2018)

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES1829955**

Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: RBonetti@golder.com.au	E-mail	: ALSEnviro.Sydney@alsglobal.com
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9478 3901	Facsimile	: +61-2-8784 8500
Project	: SYDNEY METRO	Page	: 1 of 6
Order number	:	Quote number	: ES2017GOLASS0019 (SY/698/17 C V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Waterloo Station		
Sampler	:		

Dates

Date Samples Received	: 10-Oct-2018 13:00	Issue Date	: 10-Oct-2018
Client Requested Due Date	: 17-Oct-2018	Scheduled Reporting Date	: **17-Oct-2018**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 7	Temperature	: 2.8'c - Ice present
Receipt Detail	:	No. of samples received / analysed	: 83 / 63

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
- **Did not receive sample SRT_BH417_3.0 in green snap lock bag.**
- **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 absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- SPOCAS analysis will be conducted by ALS Brisbane.
- Received extra samples with the following ID's: BH414_0.14 and SRT_BH418-3.0.
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.

Sample Container(s)/Preservation Non-Compliances

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

Method Client sample ID	Sample Container Received	Preferred Sample Container for Analysis
Asbestos Classification and Quantitation per NEPM 2013 : EA200N		
SRT-BH420-0.5	- Snap Lock Bag	- Snap Lock Bag: Separate bag received
SRT_BH416_0.25	- Snap Lock Bag - ACM/Asbestos Grab Bag	- Snap Lock Bag: Separate bag received
SRT_BH416_1.0	- Snap Lock Bag - ACM/Asbestos Grab Bag	- Snap Lock Bag: Separate bag received
SRT_BH426_0.1	- Snap Lock Bag - ACM/Asbestos Grab Bag	- Snap Lock Bag: Separate bag received
QCA101	- Snap Lock Bag - Subsampled by ALS	- Snap Lock Bag: Separate bag received
Asbestos Identification in Soils : EA200		
QCA101	- Snap Lock Bag - Subsampled by ALS	- Snap Lock Bag - ACM/Asbestos Grab Bag
Suspension Peroxide Oxidation-Combined Acidity and Sulphate : EA029		
SRT-BH420-4.0-4.45	- Snap Lock Bag - frozen on receipt	- Snap Lock Bag - frozen
SRT-BH420-5.5-5.95	- Snap Lock Bag - frozen on receipt	- Snap Lock Bag - frozen
Total Phenol by Discrete Analyser : EP035G		
RB100	- Clear Plastic Bottle - Nitric Acid; Unfiltered	- Clear Plastic Bottle - Sulfuric Acid
RB103	- Clear Plastic Bottle - Nitric Acid; Unfiltered	- Clear Plastic Bottle - Sulfuric Acid

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	Client sampling date / time	Client sample ID	SOIL - EA029 SPOCAS	SOIL - EA055-103 Moisture Content	SOIL - EA200N Asbestos in Soils - (<1kg samples ONLY)	SOIL - EP035G (solids) Total Phenol by Discrete Analyser	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - S-12 OC/OP Pesticides	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES1829955-001	06-Oct-2018 00:00	SRT-BH420-0.5		✓	✓	✓	✓	✓	✓
ES1829955-002	06-Oct-2018 00:00	SRT-BH420-1.0		✓					✓
ES1829955-003	06-Oct-2018 00:00	SRT-BH420-2.0		✓					✓
ES1829955-004	06-Oct-2018 00:00	SRT-BH420-3.0	✓						
ES1829955-007	06-Oct-2018 00:00	SRT-BH420-4.0-4.45	✓						
ES1829955-008	06-Oct-2018 00:00	SRT-BH420-5.5-5.95	✓						
ES1829955-010	06-Oct-2018 00:00	SRT_BH408_0.2		✓	✓				✓
ES1829955-011	06-Oct-2018 00:00	SRT_BH408_0.5		✓		✓	✓	✓	✓
ES1829955-013	06-Oct-2018 00:00	SRT_BH408_1.5		✓					
ES1829955-014	06-Oct-2018 00:00	SRT_BH408_2.0		✓					✓
ES1829955-015	06-Oct-2018 00:00	SRT_BH408_3.0	✓	✓					
ES1829955-017	06-Oct-2018 00:00	SRT_BH409_0.5		✓	✓	✓	✓	✓	✓
ES1829955-019	06-Oct-2018 00:00	SRT_BH409_1.5		✓					✓
ES1829955-020	06-Oct-2018 00:00	SRT_BH409_2.0		✓					
ES1829955-021	06-Oct-2018 00:00	SRT_BH409_3.0	✓	✓					✓
ES1829955-022	06-Oct-2018 00:00	SRT_BH409_4.0	✓						
ES1829955-023	06-Oct-2018 00:00	SRT_BH410_0.2		✓	✓				✓
ES1829955-024	06-Oct-2018 00:00	SRT_BH410_0.8		✓		✓	✓	✓	✓

			SOIL - EA029 SPOCAS	SOIL - EA055-103 Moisture Content	SOIL - EA200N Asbestos in Soils - (<1kg samples ONLY)	SOIL - EP035G (solids) Total Phenol by Discrete Analyser	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - S-12 OC/OP Pesticides	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES1829955-026	06-Oct-2018 00:00	SRT_BH410_1.5		✓					✓
ES1829955-028	06-Oct-2018 00:00	SRT_BH410_3.0	✓						
ES1829955-029	06-Oct-2018 00:00	SRT_BH411_0.15			✓				
ES1829955-030	06-Oct-2018 00:00	SRT_BH411_0.5		✓		✓	✓	✓	✓
ES1829955-031	06-Oct-2018 00:00	SRT_BH411_1.0		✓					✓
ES1829955-033	06-Oct-2018 00:00	SRT_BH411_2.0		✓					✓
ES1829955-034	06-Oct-2018 00:00	SRT_BH411_3.0	✓						
ES1829955-035	06-Oct-2018 00:00	SRT_BH412_0.11		✓		✓	✓	✓	
ES1829955-036	06-Oct-2018 00:00	SRT_BH412_0.5		✓	✓				✓
ES1829955-037	06-Oct-2018 00:00	SRT_BH412_1.0		✓	✓	✓	✓	✓	✓
ES1829955-039	06-Oct-2018 00:00	SRT_BH412_2.0		✓					✓
ES1829955-040	06-Oct-2018 00:00	SRT_BH412_3.0	✓						
ES1829955-041	06-Oct-2018 00:00	SRT_BH416_0.25		✓	✓				✓
ES1829955-042	06-Oct-2018 00:00	SRT_BH416_0.5		✓		✓	✓	✓	✓
ES1829955-043	06-Oct-2018 00:00	SRT_BH416_1.0		✓	✓				
ES1829955-044	06-Oct-2018 00:00	SRT_BH416_1.5		✓					✓
ES1829955-046	06-Oct-2018 00:00	SRT_BH416_3.0	✓	✓					✓
ES1829955-048	06-Oct-2018 00:00	SRT_BH417_0.5		✓	✓	✓	✓	✓	✓
ES1829955-049	06-Oct-2018 00:00	SRT_BH417_1.5		✓		✓	✓		✓
ES1829955-050	06-Oct-2018 00:00	SRT_BH417_2.0		✓					
ES1829955-051	06-Oct-2018 00:00	SRT_BH417_3.0		✓					✓
ES1829955-052	06-Oct-2018 00:00	SRT_BH421_0.25		✓	✓			✓	
ES1829955-053	06-Oct-2018 00:00	SRT_BH421_0.5		✓					✓
ES1829955-054	06-Oct-2018 00:00	SRT_BH421_1.0		✓					✓
ES1829955-057	06-Oct-2018 00:00	SRT_BH421_3.0	✓	✓					✓
ES1829955-058	07-Oct-2018 00:00	SRT_BH422_0.5		✓	✓	✓	✓	✓	✓
ES1829955-059	07-Oct-2018 00:00	SRT_BH422_1.0		✓					✓
ES1829955-060	07-Oct-2018 00:00	SRT_BH422_1.5		✓					✓
ES1829955-062	07-Oct-2018 00:00	SRT_BH422_3.0	✓						
ES1829955-063	07-Oct-2018 00:00	SRT_BH426_0.1		✓	✓				✓
ES1829955-064	07-Oct-2018 00:00	SRT_BH426_0.5		✓		✓	✓	✓	
ES1829955-065	07-Oct-2018 00:00	SRT_BH426_1.0		✓		✓	✓		✓
ES1829955-067	07-Oct-2018 00:00	SRT_BH426_2.0		✓					✓
ES1829955-069	07-Oct-2018 00:00	SRT_BH426_4.0	✓	✓					✓
ES1829955-070	07-Oct-2018 00:00	SRT_BH426_5.0	✓						
ES1829955-074	06-Oct-2018 00:00	QCA101		✓	✓	✓	✓	✓	✓
ES1829955-075	06-Oct-2018 00:00	QCA102		✓					✓
ES1829955-076	06-Oct-2018 00:00	QCA103		✓					✓
ES1829955-077	02-Oct-2018 00:00	Trip Spike 8		✓					
ES1829955-078	02-Oct-2018 00:00	Trip Spike TS100		✓					
ES1829955-079	05-Oct-2018 00:00	Trip Blank		✓					

			SOIL - EA029 SPOCAS	SOIL - EA055-103 Moisture Content	SOIL - EA200N Asbestos in Soils - (<1kg samples ONLY)	SOIL - EP035G (solids) Total Phenol by Discrete Analyser	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - S-12 OC/OP Pesticides	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES1829955-080	05-Oct-2018 00:00	Trip Blank TB100		✓					
ES1829955-083	02-Oct-2018 00:00	Trip Control Spike		✓					

Matrix: **SOIL**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	(On Hold) SOIL No analysis requested	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
ES1829955-005	06-Oct-2018 00:00	SRT-BH420-1.0-1.45	✓		
ES1829955-006	06-Oct-2018 00:00	SRT-BH420-2.5-2.95	✓		
ES1829955-009	06-Oct-2018 00:00	SRT-BH420-7.0-7.45	✓		
ES1829955-011	06-Oct-2018 00:00	SRT_BH408_0.5		✓	
ES1829955-012	06-Oct-2018 00:00	SRT_BH408_1.0	✓		
ES1829955-013	06-Oct-2018 00:00	SRT_BH408_1.5		✓	
ES1829955-015	06-Oct-2018 00:00	SRT_BH408_3.0		✓	
ES1829955-016	06-Oct-2018 00:00	SRT_BH409_0.1	✓		
ES1829955-017	06-Oct-2018 00:00	SRT_BH409_0.5		✓	
ES1829955-018	06-Oct-2018 00:00	SRT_BH409_1.0	✓		
ES1829955-020	06-Oct-2018 00:00	SRT_BH409_2.0		✓	
ES1829955-025	06-Oct-2018 00:00	SRT_BH410_1.0	✓		
ES1829955-026	06-Oct-2018 00:00	SRT_BH410_1.5		✓	
ES1829955-027	06-Oct-2018 00:00	SRT_BH410_2.0	✓		
ES1829955-032	06-Oct-2018 00:00	SRT_BH411_1.5	✓		
ES1829955-038	06-Oct-2018 00:00	SRT_BH412_1.5	✓		
ES1829955-041	06-Oct-2018 00:00	SRT_BH416_0.25		✓	
ES1829955-043	06-Oct-2018 00:00	SRT_BH416_1.0		✓	
ES1829955-045	06-Oct-2018 00:00	SRT_BH416_2.0	✓		
ES1829955-046	06-Oct-2018 00:00	SRT_BH416_3.0		✓	
ES1829955-047	06-Oct-2018 00:00	SRT_BH417_0.2	✓		
ES1829955-048	06-Oct-2018 00:00	SRT_BH417_0.5		✓	
ES1829955-050	06-Oct-2018 00:00	SRT_BH417_2.0		✓	
ES1829955-051	06-Oct-2018 00:00	SRT_BH417_3.0		✓	
ES1829955-055	06-Oct-2018 00:00	SRT_BH421_1.5	✓		
ES1829955-056	06-Oct-2018 00:00	SRT_BH421_2.0	✓		
ES1829955-057	06-Oct-2018 00:00	SRT_BH421_3.0			✓
ES1829955-061	07-Oct-2018 00:00	SRT_BH422_2.0	✓		

			(On Hold) SOIL No analysis requested	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
ES1829955-063	07-Oct-2018 00:00	SRT_BH426_0.1		✓	
ES1829955-065	07-Oct-2018 00:00	SRT_BH426_1.0		✓	
ES1829955-066	07-Oct-2018 00:00	SRT_BH426_1.5	✓		
ES1829955-068	07-Oct-2018 00:00	SRT_BH426_3.0	✓		
ES1829955-073	06-Oct-2018 00:00	QCA100	✓		
ES1829955-074	06-Oct-2018 00:00	QCA101		✓	
ES1829955-081	07-Oct-2018 00:00	BH414-0.14	✓		
ES1829955-082	07-Oct-2018 00:00	SRT_BH418-3.0	✓		

Matrix: **SOIL**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	SOIL - S-18 (NO MOIST) TRH(C6-C9)/BTEXN with No Moisture for TBs	SOIL - S-18 TRH(C6-C9)/BTEXN
ES1829955-077	02-Oct-2018 00:00	Trip Spike 8		✓
ES1829955-078	02-Oct-2018 00:00	Trip Spike TS100		✓
ES1829955-079	05-Oct-2018 00:00	Trip Blank	✓	
ES1829955-080	05-Oct-2018 00:00	Trip Blank TB100	✓	
ES1829955-083	02-Oct-2018 00:00	Trip Control Spike		✓

Matrix: **WATER**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	WATER - EP035G Total Phenol by Discrete Analyser	WATER - EP066-PCB-WA Polychlorinated Biphenyls (PCB)	WATER - W-12 OC/OP Pesticides	WATER - W-26T TRH/BTEXN/PAH/Total 8 Metals
ES1829955-071	06-Oct-2018 00:00	RB100	✓	✓	✓	✓
ES1829955-072	07-Oct-2018 00:00	RB103	✓	✓	✓	✓

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EP074 (water) Volatile Organic Compounds
ES1829955-071	06-Oct-2018 00:00	RB100	✓
ES1829955-072	07-Oct-2018 00:00	RB103	✓

Proactive Holding Time Report

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

Matrix: **SOIL**

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

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
				Date	Evaluation	Date	Evaluation
EA029: Suspension Peroxide Oxidation-Combined Acidity and Sulphate							
SRT-BH420-3.0	Snap Lock Bag	07-Oct-2018	05-Jan-2019	10-Oct-2018	×	----	----
SRT-BH420-4.0-4.45	Snap Lock Bag - frozen on recei	07-Oct-2018	05-Jan-2019	10-Oct-2018	×	----	----
SRT-BH420-5.5-5.95	Snap Lock Bag - frozen on recei	07-Oct-2018	05-Jan-2019	10-Oct-2018	×	----	----

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	au_accountspayable@golder.com.au

BARRY HOUSTON

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

RITA BONETTI

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

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1829955**	Page	: 1 of 96
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: SYDNEY METRO	Date Samples Received	: 10-Oct-2018 13:00
Order number	: .	Date Analysis Commenced	: 11-Oct-2018
C-O-C number	: ----	Issue Date	: 17-Oct-2018 17:57
Sampler	: ----		
Site	: Waterloo Station		
Quote number	: SY/698/17 C V4		
No. of samples received	: 84		
No. of samples analysed	: 64		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive 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*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini		Sydney Organics, Smithfield, NSW
Gerrad Morgan	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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.

- EG005: Poor precision was obtained for Copper on sample ES1829955-1. Results have been confirmed by re-extraction and reanalysis.
- EG005: Poor spike recovery was obtained for Zinc on sample ES1829955-1. Results have been confirmed by re-extraction and reanalysis.
- EG005: Poor precision was obtained for Lead and Zinc on sample ES1829955-60. Results have been confirmed by re-extraction and reanalysis.
- EP066 : Positive PCB result is confirmed by re-extraction and re-analysis.
- EP068: Positive results have been confirmed by re-extraction and re-analysis.
- EP071: Results of sample QCA102 have been confirmed by re-extraction and re-analysis.
- EG035: Positive Hg result for ES1829955 #2 has been confirmed by reanalysis.
- ASS: EA029 (SPOCAS): Retained Acidity not required because pH KCl greater than or equal to 4.5
- EP080: The trip spike and its control have been analysed for volatile TPH and BTEX only. The trip spike and control were prepared in the lab using reagent grade sand spiked with petrol. The spike was dispatched from the lab and the control retained.
- EA200N: Asbestos weights and percentages are not covered under the Scope of NATA Accreditation.
  Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present)
  The Asbestos (Fines and Fibrous) weight is calculated from the extracted Fibrous Asbestos and Asbestos Fines as an equivalent weight of 100% Asbestos
  Percentages for Asbestos content in ACM are based on the 2013 NEPM default values.
  All calculations of percentage Asbestos under this method are approximate and should be used as a guide only.
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO3) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m3 in-situ soil, multiply reported results x wet bulk density of soil in t/m3.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.
- EA200N: ALS laboratory procedures and methods used for the identification and quantitation of asbestos are consistent with AS4964-2004 and the requirements of the 2013 NEPM for Assessment of Site Contamination

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH420-0.5	SRT-BH420-1.0	SRT-BH420-2.0	SRT-BH420-3.0	SRT-BH420-4.0-4.45
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-001	ES1829955-002	ES1829955-003	ES1829955-004	ES1829955-007
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	----	----	----	**6.8**	**6.0**
pH OX (23B)	----	0.1	pH Unit	----	----	----	**6.7**	**5.1**
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	----	----	<2	<2
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	----	----	<2	**65**
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	----	----	<2	**65**
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	----	----	<0.020	<0.020
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	----	----	<0.020	**0.104**
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	----	----	<0.020	**0.104**
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	----	----	<0.020	<0.020
Peroxide Sulfur (23De)	----	0.020	% S	----	----	----	<0.020	<0.020
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	----	----	<0.020	<0.020
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	----	----	<10	<10
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	----	----	**0.072**	<0.020
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	----	----	**0.086**	<0.020
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	----	----	<0.020	<0.020
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	----	----	<10	<10
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	----	----	<0.020	<0.020
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	----	----	<0.020	<0.020
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	----	----	<0.020	<0.020
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	----	----	<0.020	<0.020
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	----	----	<10	<10
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	----	----	<0.020	<0.020
EA029-F: Excess Acid Neutralising Capacity								
Excess Acid Neutralising Capacity (23Q)	----	0.020	% CaCO3	----	----	----	**0.634**	----
acidity - Excess Acid Neutralising Capacity (a-23Q)	----	10	mole H+ / t	----	----	----	**127**	----
sulfidic - Excess Acid Neutralising Capacity (s-23Q)	----	0.020	% S	----	----	----	**0.203**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH420-0.5	SRT-BH420-1.0	SRT-BH420-2.0	SRT-BH420-3.0	SRT-BH420-4.0-4.45
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-001	ES1829955-002	ES1829955-003	ES1829955-004	ES1829955-007
				Result	Result	Result	Result	Result
EA029-F: Excess Acid Neutralising Capacity - Continued								
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	----	----	**1.5**	**1.5**
Net Acidity (sulfur units)	----	0.02	% S	----	----	----	<0.02	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	----	<10	<10
Liming Rate	----	1	kg CaCO3/t	----	----	----	<1	<1
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	----	----	<0.02	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	----	----	<10	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	----	----	<1	<1
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**11.0**	**12.9**	**5.4**	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No***	----	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	----	----	----	----
Asbestos Type	1332-21-4	-	--	**Ch**	----	----	----	----
Sample weight (dry)	----	0.01	g	**1090**	----	----	----	----
APPROVED IDENTIFIER:	----	-	--	**C.OWLER**	----	----	----	----
EA200N: Asbestos Quantification (non-NATA)								
ø **Asbestos (Fines and Fibrous <7mm)**	1332-21-4	0.0004	g	<0.0004	----	----	----	----
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	----	----	----	----
ø **Asbestos Containing Material**	1332-21-4	0.1	g	**0.7**	----	----	----	----
ø **Asbestos Containing Material (as 15% Asbestos in ACM >7mm)**	1332-21-4	0.01	% (w/w)	<0.01	----	----	----	----
ø **Weight Used for % Calculation**	----	0.0001	kg	**1.09**	----	----	----	----
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	----	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**11**	**9**	<5	----	----
Cadmium	7440-43-9	1	mg/kg	**2**	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	**9**	**12**	<2	----	----
Copper	7440-50-8	5	mg/kg	**76**	**78**	<5	----	----
Lead	7439-92-1	5	mg/kg	**618**	**628**	**15**	----	----
Nickel	7440-02-0	2	mg/kg	**8**	**10**	<2	----	----
Zinc	7440-66-6	5	mg/kg	**804**	**481**	**17**	----	----
EG035T: Total Recoverable Mercury by FIMS								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH420-0.5	SRT-BH420-1.0	SRT-BH420-2.0	SRT-BH420-3.0	SRT-BH420-4.0-4.45
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-001	ES1829955-002	ES1829955-003	ES1829955-004	ES1829955-007
				Result	Result	Result	Result	Result
EG035T: Total Recoverable Mercury by FIMS - Continued								
Mercury	7439-97-6	0.1	mg/kg	**0.6**	**5.8**	<0.1	----	----
EP035G: Total Phenol by Discrete Analyser								
Phenols (Total)	----	1	mg/kg	<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	----	----	----	----
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	----	----	----	----
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	72-54-8/72-55-9/50-29-3	0.05	mg/kg	<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH420-0.5	SRT-BH420-1.0	SRT-BH420-2.0	SRT-BH420-3.0	SRT-BH420-4.0-4.45
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-001	ES1829955-002	ES1829955-003	ES1829955-004	ES1829955-007
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	**0.5**	**0.8**	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	**1.3**	**0.9**	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg	**1.4**	**0.9**	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	**0.6**	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg	**0.6**	<0.5	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	**0.8**	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	**0.8**	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH420-0.5	SRT-BH420-1.0	SRT-BH420-2.0	SRT-BH420-3.0	SRT-BH420-4.0-4.45
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-001	ES1829955-002	ES1829955-003	ES1829955-004	ES1829955-007
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	**6.0**	**2.6**	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	**0.9**	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**1.2**	**0.6**	**0.6**	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.6**	**1.2**	**1.2**	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**93.6**	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**102**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH420-0.5	SRT-BH420-1.0	SRT-BH420-2.0	SRT-BH420-3.0	SRT-BH420-4.0-4.45
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-001	ES1829955-002	ES1829955-003	ES1829955-004	ES1829955-007
					Result	Result	Result	Result	Result
EP068T: Organophosphorus Pesticide Surrogate - Continued									
DEF	78-48-8	0.05	%		69.9	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		75.6	79.1	78.4	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		78.4	82.1	83.1	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		55.4	73.3	63.7	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		83.4	87.2	86.4	----	----
Anthracene-d10	1719-06-8	0.5	%		87.5	89.9	90.1	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		78.7	80.4	83.4	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		95.0	90.7	100	----	----
Toluene-D8	2037-26-5	0.2	%		89.9	82.2	102	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		92.7	78.8	100	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH420-5.5-5.95	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-008	ES1829955-010	ES1829955-011	ES1829955-013	ES1829955-014
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	**4.8**	----	----	----	----
pH OX (23B)	----	0.1	pH Unit	**4.9**	----	----	----	----
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	**25**	----	----	----	----
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	**80**	----	----	----	----
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	**55**	----	----	----	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	**0.040**	----	----	----	----
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	**0.129**	----	----	----	----
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	**0.089**	----	----	----	----
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	<0.020	----	----	----	----
Peroxide Sulfur (23De)	----	0.020	% S	<0.020	----	----	----	----
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	<0.020	----	----	----	----
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	----	----	----	----
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	<0.020	----	----	----	----
Peroxide Calcium (23Wh)	----	0.020	% Ca	**0.027**	----	----	----	----
Acid Reacted Calcium (23X)	----	0.020	% Ca	**0.027**	----	----	----	----
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	**14**	----	----	----	----
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	**0.022**	----	----	----	----
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	<0.020	----	----	----	----
Peroxide Magnesium (23Tm)	----	0.020	% Mg	<0.020	----	----	----	----
Acid Reacted Magnesium (23U)	----	0.020	% Mg	<0.020	----	----	----	----
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	----	----	----	----
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	<0.020	----	----	----	----
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	**1.5**	----	----	----	----
Net Acidity (sulfur units)	----	0.02	% S	**0.04**	----	----	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	**25**	----	----	----	----
Liming Rate	----	1	kg CaCO3/t	**2**	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH420-5.5-5.95	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-008	ES1829955-010	ES1829955-011	ES1829955-013	ES1829955-014
					Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued									
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		**0.04**	----	----	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		**25**	----	----	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t		**2**	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		----	----	----	**4.2**	----
Moisture Content	----	1.0	%		----	**9.7**	**2.2**	----	**4.8**
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		----	**No**	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres		----	**No**	----	----	----
Asbestos Type	1332-21-4	-	--		----	**-**	----	----	----
Sample weight (dry)	----	0.01	g		----	**488**	----	----	----
APPROVED IDENTIFIER:	----	-	--		----	**C.OWLER**	----	----	----
EA200N: Asbestos Quantification (non-NATA)									
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g		----	<0.0004	----	----	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		----	<0.001	----	----	----
ø Asbestos Containing Material	1332-21-4	0.1	g		----	<0.1	----	----	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)		----	<0.01	----	----	----
ø Weight Used for % Calculation	----	0.0001	kg		----	**0.488**	----	----	----
ø Fibrous Asbestos >7mm	----	0.0004	g		----	<0.0004	----	----	----
EG005T: Total Metals by ICP-AES									
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		----	<2	<2	----	<2
Copper	7440-50-8	5	mg/kg		----	**6**	<5	----	<5
Lead	7439-92-1	5	mg/kg		----	**55**	<5	----	<5
Nickel	7440-02-0	2	mg/kg		----	<2	<2	----	<2
Zinc	7440-66-6	5	mg/kg		----	**73**	<5	----	<5
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		----	<0.1	<0.1	----	<0.1
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	1	mg/kg		----	----	<1	----	----
EP066: Polychlorinated Biphenyls (PCB)									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH420-5.5-5.95	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-008	ES1829955-010	ES1829955-011	ES1829955-013	ES1829955-014
				Result	Result	Result	Result	Result
EP066: Polychlorinated Biphenyls (PCB) - Continued								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	<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	----	----
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	72-54-8/72-55-9/50-2	0.05	mg/kg	----	----	<0.05	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	----	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg	----	----	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg	----	----	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	<0.05	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH420-5.5-5.95	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-008	ES1829955-010	ES1829955-011	ES1829955-013	ES1829955-014
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg		----	----	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg		----	----	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg		----	----	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg		----	----	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg		----	----	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg		----	----	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	<0.05	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		----	----	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		----	----	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		----	----	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	----	<0.5	<0.5	----
Styrene	100-42-5	0.5	mg/kg		----	----	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		----	----	<0.5	<0.5	----
Isopropylbenzene	98-82-8	0.5	mg/kg		----	----	<0.5	<0.5	----
n-Propylbenzene	103-65-1	0.5	mg/kg		----	----	<0.5	<0.5	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		----	----	<0.5	<0.5	----
sec-Butylbenzene	135-98-8	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		----	----	<0.5	<0.5	----
tert-Butylbenzene	98-06-6	0.5	mg/kg		----	----	<0.5	<0.5	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg		----	----	<0.5	<0.5	----
n-Butylbenzene	104-51-8	0.5	mg/kg		----	----	<0.5	<0.5	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		----	----	<5	<5	----
2-Butanone (MEK)	78-93-3	5	mg/kg		----	----	<5	<5	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		----	----	<5	<5	----
2-Hexanone (MBK)	591-78-6	5	mg/kg		----	----	<5	<5	----
EP074C: Sulfonated Compounds									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH420-5.5-5.95	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-008	ES1829955-010	ES1829955-011	ES1829955-013	ES1829955-014
					Result	Result	Result	Result	Result
EP074C: Sulfonated Compounds - Continued									
Carbon disulfide	75-15-0	0.5	mg/kg		----	----	<0.5	<0.5	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		----	----	<0.5	<0.5	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		----	----	<0.5	<0.5	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		----	----	<0.5	<0.5	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		----	----	<5	<5	----
Chloromethane	74-87-3	5	mg/kg		----	----	<5	<5	----
Vinyl chloride	75-01-4	5	mg/kg		----	----	<5	<5	----
Bromomethane	74-83-9	5	mg/kg		----	----	<5	<5	----
Chloroethane	75-00-3	5	mg/kg		----	----	<5	<5	----
Trichlorofluoromethane	75-69-4	5	mg/kg		----	----	<5	<5	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		----	----	<0.5	<0.5	----
Iodomethane	74-88-4	0.5	mg/kg		----	----	<0.5	<0.5	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		----	----	<0.5	<0.5	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		----	----	<0.5	<0.5	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		----	----	<0.5	<0.5	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		----	----	<0.5	<0.5	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		----	----	<0.5	<0.5	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		----	----	<0.5	<0.5	----
Trichloroethene	79-01-6	0.5	mg/kg		----	----	<0.5	<0.5	----
Dibromomethane	74-95-3	0.5	mg/kg		----	----	<0.5	<0.5	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		----	----	<0.5	<0.5	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		----	----	<0.5	<0.5	----
Tetrachloroethene	127-18-4	0.5	mg/kg		----	----	<0.5	<0.5	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		----	----	<0.5	<0.5	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		----	----	<0.5	<0.5	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		----	----	<0.5	<0.5	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		----	----	<0.5	<0.5	----
Pentachloroethane	76-01-7	0.5	mg/kg		----	----	<0.5	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH420-5.5-5.95	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-008	ES1829955-010	ES1829955-011	ES1829955-013	ES1829955-014
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		----	----	<0.5	<0.5	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		----	----	<0.5	<0.5	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		----	----	<0.5	<0.5	----
Bromobenzene	108-86-1	0.5	mg/kg		----	----	<0.5	<0.5	----
2-Chlorotoluene	95-49-8	0.5	mg/kg		----	----	<0.5	<0.5	----
4-Chlorotoluene	106-43-4	0.5	mg/kg		----	----	<0.5	<0.5	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		----	----	<0.5	<0.5	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		----	----	<0.5	<0.5	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		----	----	<0.5	<0.5	----
Bromodichloromethane	75-27-4	0.5	mg/kg		----	----	<0.5	<0.5	----
Dibromochloromethane	124-48-1	0.5	mg/kg		----	----	<0.5	<0.5	----
Bromoform	75-25-2	0.5	mg/kg		----	----	<0.5	<0.5	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		----	----	<1	<1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH420-5.5-5.95	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-008	ES1829955-010	ES1829955-011	ES1829955-013	ES1829955-014
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**0.6**	**0.6**	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**1.2**	**1.2**	----	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	<10	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg		----	<50	<50	----	<50
C15 - C28 Fraction	----	100	mg/kg		----	<100	<100	----	<100
C29 - C36 Fraction	----	100	mg/kg		----	<100	<100	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	<50	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	<10	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	<10	----	<10
>C10 - C16 Fraction	----	50	mg/kg		----	<50	<50	----	<50
>C16 - C34 Fraction	----	100	mg/kg		----	<100	<100	----	<100
>C34 - C40 Fraction	----	100	mg/kg		----	<100	<100	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	<50	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	<50	----	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg		----	<0.2	<0.2	----	<0.2
^ Total Xylenes	----	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Naphthalene	91-20-3	1	mg/kg		----	<1	<1	----	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	**127**	----	----
EP068S: Organochlorine Pesticide Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH420-5.5-5.95	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-008	ES1829955-010	ES1829955-011	ES1829955-013	ES1829955-014
					Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate - Continued									
Dibromo-DDE	21655-73-2	0.05	%		----	----	125	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	81.0	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		----	----	82.6	97.4	----
Toluene-D8	2037-26-5	0.5	%		----	----	84.9	106	----
4-Bromofluorobenzene	460-00-4	0.5	%		----	----	81.5	99.2	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	81.6	75.4	----	79.8
2-Chlorophenol-D4	93951-73-6	0.5	%		----	84.4	79.0	----	83.3
2.4.6-Tribromophenol	118-79-6	0.5	%		----	73.2	60.0	----	67.3
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	88.7	82.8	----	87.3
Anthracene-d10	1719-06-8	0.5	%		----	93.2	88.5	----	104
4-Terphenyl-d14	1718-51-0	0.5	%		----	82.7	79.5	----	96.0
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	91.4	92.6	----	105
Toluene-D8	2037-26-5	0.2	%		----	87.1	97.4	----	107
4-Bromofluorobenzene	460-00-4	0.2	%		----	90.4	85.0	----	104

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH408_3.0	SRT_BH409_0.5	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-015	ES1829955-017	ES1829955-019	ES1829955-020	ES1829955-021
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	**5.8**	----	----	----	**5.1**
pH OX (23B)	----	0.1	pH Unit	**4.6**	----	----	----	**4.6**
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	**2**	----	----	----	**11**
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	**77**	----	----	----	**76**
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	**75**	----	----	----	**64**
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	<0.020	----	----	----	<0.020
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	**0.123**	----	----	----	**0.122**
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	**0.120**	----	----	----	**0.103**
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	<0.020	----	----	----	<0.020
Peroxide Sulfur (23De)	----	0.020	% S	<0.020	----	----	----	<0.020
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	<0.020	----	----	----	<0.020
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	----	----	----	<10
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	<0.020	----	----	----	<0.020
Peroxide Calcium (23Wh)	----	0.020	% Ca	<0.020	----	----	----	<0.020
Acid Reacted Calcium (23X)	----	0.020	% Ca	<0.020	----	----	----	<0.020
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	----	----	----	<10
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	<0.020	----	----	----	<0.020
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	<0.020	----	----	----	<0.020
Peroxide Magnesium (23Tm)	----	0.020	% Mg	<0.020	----	----	----	<0.020
Acid Reacted Magnesium (23U)	----	0.020	% Mg	<0.020	----	----	----	<0.020
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	----	----	----	<10
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	<0.020	----	----	----	<0.020
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	**1.5**	----	----	----	**1.5**
Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	----	----	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	----	----	**11**
Liming Rate	----	1	kg CaCO3/t	<1	----	----	----	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH408_3.0	SRT_BH409_0.5	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-015	ES1829955-017	ES1829955-019	ES1829955-020	ES1829955-021
					Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued									
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		<0.02	----	----	----	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		<10	----	----	----	**11**
Liming Rate excluding ANC	----	1	kg CaCO3/t		<1	----	----	----	<1
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**3.3**	----	----	**4.2**	----
Moisture Content	----	1.0	%		----	**4.4**	**4.8**	----	**31.1**
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		----	**No**	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres		----	**No**	----	----	----
Asbestos Type	1332-21-4	-	--		----	**-**	----	----	----
Sample weight (dry)	----	0.01	g		----	**394**	----	----	----
APPROVED IDENTIFIER:	----	-	--		----	**C.OWLER**	----	----	----
EA200N: Asbestos Quantification (non-NATA)									
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g		----	<0.0004	----	----	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		----	<0.001	----	----	----
ø Asbestos Containing Material	1332-21-4	0.1	g		----	<0.1	----	----	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)		----	<0.01	----	----	----
ø Weight Used for % Calculation	----	0.0001	kg		----	**0.394**	----	----	----
ø Fibrous Asbestos >7mm	----	0.0004	g		----	<0.0004	----	----	----
EG005T: Total Metals by ICP-AES									
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		----	<2	<2	----	<2
Copper	7440-50-8	5	mg/kg		----	<5	<5	----	<5
Lead	7439-92-1	5	mg/kg		----	<5	<5	----	<5
Nickel	7440-02-0	2	mg/kg		----	<2	<2	----	<2
Zinc	7440-66-6	5	mg/kg		----	<5	**6**	----	<5
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		----	<0.1	<0.1	----	<0.1
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	1	mg/kg		----	<1	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH408_3.0	SRT_BH409_0.5	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-015	ES1829955-017	ES1829955-019	ES1829955-020	ES1829955-021
				Result	Result	Result	Result	Result
EP066: Polychlorinated Biphenyls (PCB) - Continued								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<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	----	----	----
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	72-54-8/72-55-9/50-29-3	0.05	mg/kg	----	<0.05	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	<0.05	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	----	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg	----	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	<0.05	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH408_3.0	SRT_BH409_0.5	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-015	ES1829955-017	ES1829955-019	ES1829955-020	ES1829955-021
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Parathion-methyl	298-00-0	0.2	mg/kg		----	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg		----	<0.05	----	----	----
Fenthion	55-38-9	0.05	mg/kg		----	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg		----	<0.2	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		----	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg		----	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		----	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	<0.05	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Styrene	100-42-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Isopropylbenzene	98-82-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
n-Propylbenzene	103-65-1	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
sec-Butylbenzene	135-98-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
tert-Butylbenzene	98-06-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
n-Butylbenzene	104-51-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		<5	<5	----	<5	----
2-Butanone (MEK)	78-93-3	5	mg/kg		<5	<5	----	<5	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		<5	<5	----	<5	----
2-Hexanone (MBK)	591-78-6	5	mg/kg		<5	<5	----	<5	----
EP074C: Sulfonated Compounds									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH408_3.0	SRT_BH409_0.5	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-015	ES1829955-017	ES1829955-019	ES1829955-020	ES1829955-021
					Result	Result	Result	Result	Result
EP074C: Sulfonated Compounds - Continued									
Carbon disulfide	75-15-0	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		<5	<5	----	<5	----
Chloromethane	74-87-3	5	mg/kg		<5	<5	----	<5	----
Vinyl chloride	75-01-4	5	mg/kg		<5	<5	----	<5	----
Bromomethane	74-83-9	5	mg/kg		<5	<5	----	<5	----
Chloroethane	75-00-3	5	mg/kg		<5	<5	----	<5	----
Trichlorofluoromethane	75-69-4	5	mg/kg		<5	<5	----	<5	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Iodomethane	74-88-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Trichloroethene	79-01-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Dibromomethane	74-95-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Tetrachloroethene	127-18-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Pentachloroethane	76-01-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH408_3.0	SRT_BH409_0.5	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-015	ES1829955-017	ES1829955-019	ES1829955-020	ES1829955-021
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Bromobenzene	108-86-1	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
2-Chlorotoluene	95-49-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
4-Chlorotoluene	106-43-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Bromodichloromethane	75-27-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Dibromochloromethane	124-48-1	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Bromoform	75-25-2	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	<1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH408_3.0	SRT_BH409_0.5	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-015	ES1829955-017	ES1829955-019	ES1829955-020	ES1829955-021
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**0.6**	**0.6**	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**1.2**	**1.2**	----	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	<10	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg		----	<50	<50	----	<50
C15 - C28 Fraction	----	100	mg/kg		----	<100	<100	----	<100
C29 - C36 Fraction	----	100	mg/kg		----	<100	<100	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	<50	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	<10	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	<10	----	<10
>C10 - C16 Fraction	----	50	mg/kg		----	<50	<50	----	<50
>C16 - C34 Fraction	----	100	mg/kg		----	<100	<100	----	<100
>C34 - C40 Fraction	----	100	mg/kg		----	<100	<100	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	<50	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	<50	----	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg		----	<0.2	<0.2	----	<0.2
^ Total Xylenes	----	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Naphthalene	91-20-3	1	mg/kg		----	<1	<1	----	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	**122**	----	----	----
EP068S: Organochlorine Pesticide Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH408_3.0	SRT_BH409_0.5	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-015	ES1829955-017	ES1829955-019	ES1829955-020	ES1829955-021
					Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate - Continued									
Dibromo-DDE	21655-73-2	0.05	%		----	96.9	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	84.4	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		92.7	93.3	----	98.6	----
Toluene-D8	2037-26-5	0.5	%		98.6	105	----	105	----
4-Bromofluorobenzene	460-00-4	0.5	%		95.0	96.4	----	99.1	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	77.5	82.4	----	77.1
2-Chlorophenol-D4	93951-73-6	0.5	%		----	80.9	86.2	----	79.8
2.4.6-Tribromophenol	118-79-6	0.5	%		----	57.3	66.3	----	61.5
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	85.6	90.1	----	84.0
Anthracene-d10	1719-06-8	0.5	%		----	90.5	94.4	----	87.9
4-Terphenyl-d14	1718-51-0	0.5	%		----	81.9	84.2	----	79.0
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	105	106	----	88.4
Toluene-D8	2037-26-5	0.2	%		----	121	111	----	86.9
4-Bromofluorobenzene	460-00-4	0.2	%		----	108	109	----	90.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH409_4.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH410_3.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-022	ES1829955-023	ES1829955-024	ES1829955-026	ES1829955-028
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	**5.8**	----	----	----	**5.9**
pH OX (23B)	----	0.1	pH Unit	**5.1**	----	----	----	**4.5**
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	**5**	----	----	----	**6**
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	**66**	----	----	----	**79**
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	**62**	----	----	----	**74**
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	<0.020	----	----	----	<0.020
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	**0.107**	----	----	----	**0.127**
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	**0.099**	----	----	----	**0.118**
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	<0.020	----	----	----	<0.020
Peroxide Sulfur (23De)	----	0.020	% S	<0.020	----	----	----	<0.020
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	<0.020	----	----	----	<0.020
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	----	----	----	<10
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	<0.020	----	----	----	**0.027**
Peroxide Calcium (23Wh)	----	0.020	% Ca	<0.020	----	----	----	**0.030**
Acid Reacted Calcium (23X)	----	0.020	% Ca	<0.020	----	----	----	<0.020
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	----	----	----	<10
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	<0.020	----	----	----	<0.020
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	<0.020	----	----	----	<0.020
Peroxide Magnesium (23Tm)	----	0.020	% Mg	<0.020	----	----	----	<0.020
Acid Reacted Magnesium (23U)	----	0.020	% Mg	<0.020	----	----	----	<0.020
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	----	----	----	<10
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	<0.020	----	----	----	<0.020
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	**1.5**	----	----	----	**1.5**
Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	----	----	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	----	----	<10
Liming Rate	----	1	kg CaCO3/t	<1	----	----	----	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH409_4.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH410_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-022	ES1829955-023	ES1829955-024	ES1829955-026	ES1829955-028
					Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued									
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		<0.02	----	----	----	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		<10	----	----	----	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t		<1	----	----	----	<1
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		----	8.7	5.6	6.8	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		----	No	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres		----	No	----	----	----
Asbestos Type	1332-21-4	-	--		----	-	----	----	----
Sample weight (dry)	----	0.01	g		----	541	----	----	----
APPROVED IDENTIFIER:	----	-	--		----	G.MORGAN	----	----	----
EA200N: Asbestos Quantification (non-NATA)									
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g		----	<0.0004	----	----	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		----	<0.001	----	----	----
ø Asbestos Containing Material	1332-21-4	0.1	g		----	<0.1	----	----	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)		----	<0.01	----	----	----
ø Weight Used for % Calculation	----	0.0001	kg		----	0.541	----	----	----
ø Fibrous Asbestos >7mm	----	0.0004	g		----	<0.0004	----	----	----
EG005T: Total Metals by ICP-AES									
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		----	4	3	3	----
Copper	7440-50-8	5	mg/kg		----	6	<5	<5	----
Lead	7439-92-1	5	mg/kg		----	20	<5	<5	----
Nickel	7440-02-0	2	mg/kg		----	2	<2	<2	----
Zinc	7440-66-6	5	mg/kg		----	92	<5	<5	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		----	<0.1	<0.1	<0.1	----
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	1	mg/kg		----	----	<1	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	----	<0.1	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH409_4.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH410_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-022	ES1829955-023	ES1829955-024	ES1829955-026	ES1829955-028
					Result	Result	Result	Result	Result
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	----	----
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	72-54-8/72-55-9/50-2	0.05	mg/kg		----	----	<0.05	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg		----	----	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg		----	----	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg		----	----	<0.05	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH409_4.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH410_3.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-022	ES1829955-023	ES1829955-024	ES1829955-026	ES1829955-028
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Fenthion	55-38-9	0.05	mg/kg	----	----	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg	----	----	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg	----	----	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg	----	----	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg	----	----	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	<0.05	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
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	----
Styrene	100-42-5	0.5	mg/kg	----	----	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	----	<0.5	----
Isopropylbenzene	98-82-8	0.5	mg/kg	----	----	----	<0.5	----
n-Propylbenzene	103-65-1	0.5	mg/kg	----	----	----	<0.5	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	----	----	----	<0.5	----
sec-Butylbenzene	135-98-8	0.5	mg/kg	----	----	----	<0.5	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	----	----	----	<0.5	----
tert-Butylbenzene	98-06-6	0.5	mg/kg	----	----	----	<0.5	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg	----	----	----	<0.5	----
n-Butylbenzene	104-51-8	0.5	mg/kg	----	----	----	<0.5	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	5	mg/kg	----	----	----	<5	----
2-Butanone (MEK)	78-93-3	5	mg/kg	----	----	----	<5	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	----	----	----	<5	----
2-Hexanone (MBK)	591-78-6	5	mg/kg	----	----	----	<5	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	----	----	----	<0.5	----
EP074D: Fumigants								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH409_4.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH410_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-022	ES1829955-023	ES1829955-024	ES1829955-026	ES1829955-028
					Result	Result	Result	Result	Result
EP074D: Fumigants - Continued									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		----	----	----	<0.5	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		----	----	----	<0.5	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		----	----	----	<0.5	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		----	----	----	<5	----
Chloromethane	74-87-3	5	mg/kg		----	----	----	<5	----
Vinyl chloride	75-01-4	5	mg/kg		----	----	----	<5	----
Bromomethane	74-83-9	5	mg/kg		----	----	----	<5	----
Chloroethane	75-00-3	5	mg/kg		----	----	----	<5	----
Trichlorofluoromethane	75-69-4	5	mg/kg		----	----	----	<5	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		----	----	----	<0.5	----
Iodomethane	74-88-4	0.5	mg/kg		----	----	----	<0.5	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		----	----	----	<0.5	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		----	----	----	<0.5	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		----	----	----	<0.5	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		----	----	----	<0.5	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		----	----	----	<0.5	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		----	----	----	<0.5	----
Trichloroethene	79-01-6	0.5	mg/kg		----	----	----	<0.5	----
Dibromomethane	74-95-3	0.5	mg/kg		----	----	----	<0.5	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		----	----	----	<0.5	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		----	----	----	<0.5	----
Tetrachloroethene	127-18-4	0.5	mg/kg		----	----	----	<0.5	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		----	----	----	<0.5	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		----	----	----	<0.5	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		----	----	----	<0.5	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		----	----	----	<0.5	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		----	----	----	<0.5	----
Pentachloroethane	76-01-7	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		----	----	----	<0.5	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		----	----	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH409_4.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH410_3.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-022	ES1829955-023	ES1829955-024	ES1829955-026	ES1829955-028
				Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	0.5	mg/kg	----	----	----	<0.5	----
Bromobenzene	108-86-1	0.5	mg/kg	----	----	----	<0.5	----
2-Chlorotoluene	95-49-8	0.5	mg/kg	----	----	----	<0.5	----
4-Chlorotoluene	106-43-4	0.5	mg/kg	----	----	----	<0.5	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	----	----	----	<0.5	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	----	----	----	<0.5	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	----	----	----	<0.5	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	----	----	----	<0.5	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	----	----	----	<0.5	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	0.5	mg/kg	----	----	----	<0.5	----
Bromodichloromethane	75-27-4	0.5	mg/kg	----	----	----	<0.5	----
Dibromochloromethane	124-48-1	0.5	mg/kg	----	----	----	<0.5	----
Bromoform	75-25-2	0.5	mg/kg	----	----	----	<0.5	----
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	----	----	----	<1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Pyrene	129-00-0	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Chrysene	218-01-9	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	<0.5	<0.5	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH409_4.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH410_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-022	ES1829955-023	ES1829955-024	ES1829955-026	ES1829955-028
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**0.6**	**0.6**	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**1.2**	**1.2**	**1.2**	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	<10	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg		----	<50	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg		----	<100	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg		----	<100	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg		----	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg		----	<100	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg		----	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	<50	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	<50	<50	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
^ Total Xylenes	----	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg		----	<1	<1	<1	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	**117**	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	**99.8**	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	**88.5**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH409_4.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH410_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-022	ES1829955-023	ES1829955-024	ES1829955-026	ES1829955-028
					Result	Result	Result	Result	Result
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		----	----	----	89.1	----
Toluene-D8	2037-26-5	0.5	%		----	----	----	98.6	----
4-Bromofluorobenzene	460-00-4	0.5	%		----	----	----	93.3	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	77.2	75.2	79.6	----
2-Chlorophenol-D4	93951-73-6	0.5	%		----	80.1	77.3	83.3	----
2.4.6-Tribromophenol	118-79-6	0.5	%		----	65.4	49.7	62.6	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	84.1	83.1	87.6	----
Anthracene-d10	1719-06-8	0.5	%		----	88.1	87.6	90.5	----
4-Terphenyl-d14	1718-51-0	0.5	%		----	79.5	79.4	81.1	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	101	87.7	99.2	----
Toluene-D8	2037-26-5	0.2	%		----	105	79.5	113	----
4-Bromofluorobenzene	460-00-4	0.2	%		----	100	87.2	107	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH411_0.15	SRT_BH411_0.5	SRT_BH411_1.0	SRT_BH411_2.0	SRT_BH411_3.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-029	ES1829955-030	ES1829955-031	ES1829955-033	ES1829955-034
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	----	----	----	----	5.8
pH OX (23B)	----	0.1	pH Unit	----	----	----	----	5.4
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	----	----	----	2
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	----	----	----	69
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	----	----	----	67
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	----	----	----	<0.020
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	----	----	----	0.111
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	----	----	----	0.107
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	----	----	----	<0.020
Peroxide Sulfur (23De)	----	0.020	% S	----	----	----	----	<0.020
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	----	----	----	<0.020
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	----	----	----	<10
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	----	----	----	0.024
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	----	----	----	0.024
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	----	----	----	<0.020
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	----	----	----	<10
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	----	----	----	<0.020
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	----	----	----	<0.020
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	----	----	----	<0.020
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	----	----	----	<0.020
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	----	----	----	<10
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	----	----	----	<0.020
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	----	----	----	1.5
Net Acidity (sulfur units)	----	0.02	% S	----	----	----	----	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	----	----	<10
Liming Rate	----	1	kg CaCO3/t	----	----	----	----	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH411_0.15	SRT_BH411_0.5	SRT_BH411_1.0	SRT_BH411_2.0	SRT_BH411_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-029	ES1829955-030	ES1829955-031	ES1829955-033	ES1829955-034
					Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued									
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		----	----	----	----	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		----	----	----	----	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t		----	----	----	----	<1
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		----	**6.7**	**4.0**	**3.3**	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		**No**	----	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres		**No**	----	----	----	----
Asbestos Type	1332-21-4	-	--		-	----	----	----	----
Sample weight (dry)	----	0.01	g		**756**	----	----	----	----
APPROVED IDENTIFIER:	----	-	--		**G.MORGAN**	----	----	----	----
EA200N: Asbestos Quantification (non-NATA)									
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g		<0.0004	----	----	----	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		<0.001	----	----	----	----
ø Asbestos Containing Material	1332-21-4	0.1	g		<0.1	----	----	----	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)		<0.01	----	----	----	----
ø Weight Used for % Calculation	----	0.0001	kg		**0.756**	----	----	----	----
ø Fibrous Asbestos >7mm	----	0.0004	g		<0.0004	----	----	----	----
EG005T: Total Metals by ICP-AES									
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		----	**3**	<2	<2	----
Copper	7440-50-8	5	mg/kg		----	**27**	<5	<5	----
Lead	7439-92-1	5	mg/kg		----	**95**	<5	<5	----
Nickel	7440-02-0	2	mg/kg		----	**2**	<2	<2	----
Zinc	7440-66-6	5	mg/kg		----	**108**	<5	<5	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		----	**0.3**	<0.1	<0.1	----
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	1	mg/kg		----	<1	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	<0.1	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH411_0.15	SRT_BH411_0.5	SRT_BH411_1.0	SRT_BH411_2.0	SRT_BH411_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-029	ES1829955-030	ES1829955-031	ES1829955-033	ES1829955-034
					Result	Result	Result	Result	Result
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		----	**0.12**	----	----	----
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	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		----	<0.2	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		----	**0.12**	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		----	<0.05	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	<0.05	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		----	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg		----	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	<0.05	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg		----	<0.05	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH411_0.15	SRT_BH411_0.5	SRT_BH411_1.0	SRT_BH411_2.0	SRT_BH411_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-029	ES1829955-030	ES1829955-031	ES1829955-033	ES1829955-034
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Fenthion	55-38-9	0.05	mg/kg		----	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg		----	<0.2	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		----	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg		----	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		----	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	<0.05	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		----	**0.5**	<0.5	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		----	**0.5**	<0.5	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	**1.0**	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**0.6**	**0.6**	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**1.2**	**1.2**	**1.2**	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	<10	<10	<10	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH411_0.15	SRT_BH411_0.5	SRT_BH411_1.0	SRT_BH411_2.0	SRT_BH411_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-029	ES1829955-030	ES1829955-031	ES1829955-033	ES1829955-034
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C10 - C14 Fraction	----	50	mg/kg		----	<50	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg		----	<100	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg		----	<100	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg		----	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg		----	<100	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg		----	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	<50	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	<50	<50	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
^ Total Xylenes	----	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg		----	<1	<1	<1	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	**128**	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	**93.5**	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	**96.6**	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	**74.2**	**80.9**	**77.7**	----
2-Chlorophenol-D4	93951-73-6	0.5	%		----	**76.2**	**84.9**	**80.7**	----
2.4.6-Tribromophenol	118-79-6	0.5	%		----	**52.6**	**62.0**	**51.6**	----
EP075(SIM)T: PAH Surrogates									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH411_0.15	SRT_BH411_0.5	SRT_BH411_1.0	SRT_BH411_2.0	SRT_BH411_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-029	ES1829955-030	ES1829955-031	ES1829955-033	ES1829955-034
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued									
2-Fluorobiphenyl	321-60-8	0.5	%		----	**80.9**	**89.9**	**85.3**	----
Anthracene-d10	1719-06-8	0.5	%		----	**85.1**	**93.7**	**88.5**	----
4-Terphenyl-d14	1718-51-0	0.5	%		----	**77.4**	**84.5**	**80.1**	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	**106**	**94.4**	**98.0**	----
Toluene-D8	2037-26-5	0.2	%		----	**98.4**	**93.6**	**94.6**	----
4-Bromofluorobenzene	460-00-4	0.2	%		----	**103**	**97.8**	**99.6**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH412_0.11	SRT_BH412_0.5	SRT_BH412_1.0	SRT_BH412_2.0	SRT_BH412_3.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-035	ES1829955-036	ES1829955-037	ES1829955-039	ES1829955-040
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	----	----	----	----	**6.0**
pH OX (23B)	----	0.1	pH Unit	----	----	----	----	**5.4**
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	----	----	----	<2
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	----	----	----	**75**
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	----	----	----	**75**
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	----	----	----	<0.020
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	----	----	----	**0.121**
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	----	----	----	**0.121**
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	----	----	----	<0.020
Peroxide Sulfur (23De)	----	0.020	% S	----	----	----	----	<0.020
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	----	----	----	<0.020
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	----	----	----	<10
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	----	----	----	**0.028**
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	----	----	----	**0.028**
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	----	----	----	<0.020
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	----	----	----	<10
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	----	----	----	<0.020
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	----	----	----	<0.020
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	----	----	----	<0.020
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	----	----	----	<0.020
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	----	----	----	<10
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	----	----	----	<0.020
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	----	----	----	**1.5**
Net Acidity (sulfur units)	----	0.02	% S	----	----	----	----	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	----	----	<10
Liming Rate	----	1	kg CaCO3/t	----	----	----	----	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH412_0.11	SRT_BH412_0.5	SRT_BH412_1.0	SRT_BH412_2.0	SRT_BH412_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-035	ES1829955-036	ES1829955-037	ES1829955-039	ES1829955-040
					Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued									
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		----	----	----	----	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		----	----	----	----	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t		----	----	----	----	<1
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		10.8	10.9	9.4	8.7	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		----	No	No	----	----
Asbestos (Trace)	1332-21-4	5	Fibres		----	No	No	----	----
Asbestos Type	1332-21-4	-	--		----	-	-	----	----
Sample weight (dry)	----	0.01	g		----	618	536	----	----
APPROVED IDENTIFIER:	----	-	--		----	G.MORGAN	G.MORGAN	----	----
EA200N: Asbestos Quantification (non-NATA)									
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g		----	<0.0004	<0.0004	----	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		----	<0.001	<0.001	----	----
ø Asbestos Containing Material	1332-21-4	0.1	g		----	<0.1	<0.1	----	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)		----	<0.01	<0.01	----	----
ø Weight Used for % Calculation	----	0.0001	kg		----	0.618	0.536	----	----
ø Fibrous Asbestos >7mm	----	0.0004	g		----	<0.0004	<0.0004	----	----
EG005T: Total Metals by ICP-AES									
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		----	11	7	5	----
Copper	7440-50-8	5	mg/kg		----	21	12	<5	----
Lead	7439-92-1	5	mg/kg		----	28	63	<5	----
Nickel	7440-02-0	2	mg/kg		----	7	4	4	----
Zinc	7440-66-6	5	mg/kg		----	54	126	69	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		----	<0.1	<0.1	<0.1	----
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	1	mg/kg		<1	----	<1	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	----	0.1	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH412_0.11	SRT_BH412_0.5	SRT_BH412_1.0	SRT_BH412_2.0	SRT_BH412_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-035	ES1829955-036	ES1829955-037	ES1829955-039	ES1829955-040
					Result	Result	Result	Result	Result
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	----	**0.23**	----	----
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	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	<0.05	----	----
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	----	**0.23**	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	<0.05	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	----	<0.05	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH412_0.11	SRT_BH412_0.5	SRT_BH412_1.0	SRT_BH412_2.0	SRT_BH412_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-035	ES1829955-036	ES1829955-037	ES1829955-039	ES1829955-040
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	----	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	----	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	<0.05	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		----	**2.8**	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		----	**0.8**	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		----	**3.4**	**0.8**	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		----	**3.6**	**0.8**	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	**1.2**	<0.5	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		----	**1.2**	<0.5	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	**1.2**	<0.5	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	**1.2**	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	**0.6**	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	**16.0**	**1.6**	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	**1.4**	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**1.8**	**0.6**	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**2.0**	**1.2**	**1.2**	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	<10	<10	<10	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH412_0.11	SRT_BH412_0.5	SRT_BH412_1.0	SRT_BH412_2.0	SRT_BH412_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-035	ES1829955-036	ES1829955-037	ES1829955-039	ES1829955-040
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C10 - C14 Fraction	----	50	mg/kg		----	<50	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg		----	**160**	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg		----	**140**	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	**300**	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg		----	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg		----	**240**	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg		----	**160**	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	**400**	<50	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	<50	<50	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
^ Total Xylenes	----	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg		----	<1	<1	<1	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**119**	----	**95.6**	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**76.1**	----	**89.8**	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**67.3**	----	**95.2**	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	**75.4**	**76.9**	**79.8**	----
2-Chlorophenol-D4	93951-73-6	0.5	%		----	**63.0**	**79.5**	**84.0**	----
2.4.6-Tribromophenol	118-79-6	0.5	%		----	**27.0**	**49.1**	**64.8**	----
EP075(SIM)T: PAH Surrogates									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH412_0.11	SRT_BH412_0.5	SRT_BH412_1.0	SRT_BH412_2.0	SRT_BH412_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-035	ES1829955-036	ES1829955-037	ES1829955-039	ES1829955-040
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued									
2-Fluorobiphenyl	321-60-8	0.5	%		----	85.0	83.2	87.2	----
Anthracene-d10	1719-06-8	0.5	%		----	88.1	89.3	92.5	----
4-Terphenyl-d14	1718-51-0	0.5	%		----	76.5	80.6	82.3	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	108	100	99.8	----
Toluene-D8	2037-26-5	0.2	%		----	103	96.0	91.9	----
4-Bromofluorobenzene	460-00-4	0.2	%		----	105	97.9	99.6	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-041	ES1829955-042	ES1829955-043	ES1829955-044	ES1829955-046
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	----	----	----	----	**6.0**
pH OX (23B)	----	0.1	pH Unit	----	----	----	----	**5.2**
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	----	----	----	<2
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	----	----	----	**66**
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	----	----	----	**66**
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	----	----	----	<0.020
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	----	----	----	**0.105**
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	----	----	----	**0.105**
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	----	----	----	<0.020
Peroxide Sulfur (23De)	----	0.020	% S	----	----	----	----	<0.020
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	----	----	----	<0.020
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	----	----	----	<10
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	----	----	----	<0.020
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	----	----	----	<0.020
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	----	----	----	<0.020
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	----	----	----	<10
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	----	----	----	<0.020
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	----	----	----	<0.020
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	----	----	----	<0.020
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	----	----	----	<0.020
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	----	----	----	<10
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	----	----	----	<0.020
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	----	----	----	**1.5**
Net Acidity (sulfur units)	----	0.02	% S	----	----	----	----	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	----	----	<10
Liming Rate	----	1	kg CaCO3/t	----	----	----	----	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-041	ES1829955-042	ES1829955-043	ES1829955-044	ES1829955-046
					Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued									
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		----	----	----	----	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		----	----	----	----	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t		----	----	----	----	<1
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		----	----	**16.7**	----	----
Moisture Content	----	1.0	%		**13.0**	**13.2**	----	**31.6**	**6.2**
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		**No**	----	**No**	----	----
Asbestos (Trace)	1332-21-4	5	Fibres		**No**	----	**No**	----	----
Asbestos Type	1332-21-4	-	--		**-**	----	**-**	----	----
Sample weight (dry)	----	0.01	g		**532**	----	**408**	----	----
APPROVED IDENTIFIER:	----	-	--		**G.MORGAN**	----	**G.MORGAN**	----	----
EA200N: Asbestos Quantification (non-NATA)									
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g		<0.0004	----	<0.0004	----	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		<0.001	----	<0.001	----	----
ø Asbestos Containing Material	1332-21-4	0.1	g		<0.1	----	<0.1	----	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)		<0.01	----	<0.01	----	----
ø Weight Used for % Calculation	----	0.0001	kg		**0.532**	----	**0.408**	----	----
ø Fibrous Asbestos >7mm	----	0.0004	g		<0.0004	----	<0.0004	----	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		**6**	<5	----	<5	<5
Cadmium	7440-43-9	1	mg/kg		**6**	<1	----	<1	<1
Chromium	7440-47-3	2	mg/kg		**20**	**7**	----	<2	<2
Copper	7440-50-8	5	mg/kg		**28**	**40**	----	<5	<5
Lead	7439-92-1	5	mg/kg		**813**	**276**	----	**7**	<5
Nickel	7440-02-0	2	mg/kg		**3**	**5**	----	<2	<2
Zinc	7440-66-6	5	mg/kg		**2100**	**227**	----	**6**	**14**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		**0.2**	**1.6**	----	<0.1	<0.1
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	1	mg/kg		----	<1	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-041	ES1829955-042	ES1829955-043	ES1829955-044	ES1829955-046
				Result	Result	Result	Result	Result
EP066: Polychlorinated Biphenyls (PCB) - Continued								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<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	----	----	----
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	72-54-8/72-55-9/50-29-3	0.05	mg/kg	----	<0.05	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	<0.05	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	----	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg	----	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	<0.05	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-041	ES1829955-042	ES1829955-043	ES1829955-044	ES1829955-046
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Parathion-methyl	298-00-0	0.2	mg/kg		----	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg		----	<0.05	----	----	----
Fenthion	55-38-9	0.05	mg/kg		----	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg		----	<0.2	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		----	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg		----	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		----	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	<0.05	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Styrene	100-42-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		<5	----	<5	----	<5
2-Butanone (MEK)	78-93-3	5	mg/kg		<5	----	<5	----	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		<5	----	<5	----	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg		<5	----	<5	----	<5
EP074C: Sulfonated Compounds									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-041	ES1829955-042	ES1829955-043	ES1829955-044	ES1829955-046
					Result	Result	Result	Result	Result
EP074C: Sulfonated Compounds - Continued									
Carbon disulfide	75-15-0	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.2-Dichloropropane	78-87-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		<5	----	<5	----	<5
Chloromethane	74-87-3	5	mg/kg		<5	----	<5	----	<5
Vinyl chloride	75-01-4	5	mg/kg		<5	----	<5	----	<5
Bromomethane	74-83-9	5	mg/kg		<5	----	<5	----	<5
Chloroethane	75-00-3	5	mg/kg		<5	----	<5	----	<5
Trichlorofluoromethane	75-69-4	5	mg/kg		<5	----	<5	----	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Iodomethane	74-88-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Trichloroethene	79-01-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Dibromomethane	74-95-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-041	ES1829955-042	ES1829955-043	ES1829955-044	ES1829955-046
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Bromobenzene	108-86-1	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Bromoform	75-25-2	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	----	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	1.0	----	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		1.1	1.7	----	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		1.2	1.7	----	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		0.5	0.8	----	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		0.5	0.7	----	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		0.7	0.8	----	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		0.6	0.8	----	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-041	ES1829955-042	ES1829955-043	ES1829955-044	ES1829955-046
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		**4.6**	**7.5**	----	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		**0.7**	**1.0**	----	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**1.0**	**1.3**	----	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.3**	**1.6**	----	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	----	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	----	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	----	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	----	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	----	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	----	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	----	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	----	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	----	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	----	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	----	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	**80.0**	----	----	----
EP068S: Organochlorine Pesticide Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-041	ES1829955-042	ES1829955-043	ES1829955-044	ES1829955-046
					Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate - Continued									
Dibromo-DDE	21655-73-2	0.05	%		----	87.8	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	67.4	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		92.0	----	87.8	----	90.8
Toluene-D8	2037-26-5	0.5	%		97.8	----	91.7	----	103
4-Bromofluorobenzene	460-00-4	0.5	%		91.3	----	85.5	----	96.6
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		79.2	74.4	----	76.7	74.3
2-Chlorophenol-D4	93951-73-6	0.5	%		82.7	78.2	----	80.1	77.6
2.4.6-Tribromophenol	118-79-6	0.5	%		65.6	57.6	----	61.2	56.0
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		86.4	82.4	----	84.1	81.2
Anthracene-d10	1719-06-8	0.5	%		90.6	88.1	----	88.0	85.0
4-Terphenyl-d14	1718-51-0	0.5	%		80.3	78.6	----	78.2	74.5
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		102	100	----	89.9	101
Toluene-D8	2037-26-5	0.2	%		112	105	----	87.7	119
4-Bromofluorobenzene	460-00-4	0.2	%		107	101	----	93.0	111

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT_BH421_0.25
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-048	ES1829955-049	ES1829955-050	ES1829955-051	ES1829955-052
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		----	----	5.1	----	----
Moisture Content	----	1.0	%		13.8	6.1	----	4.7	18.4
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		No	----	----	----	No
Asbestos (Trace)	1332-21-4	5	Fibres		No	----	----	----	No
Asbestos Type	1332-21-4	-	--		-	----	----	----	-
Sample weight (dry)	----	0.01	g		486	----	----	----	658
APPROVED IDENTIFIER:	----	-	--		G.MORGAN	----	----	----	G.MORGAN
EA200N: Asbestos Quantification (non-NATA)									
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g		<0.0004	----	----	----	<0.0004
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		<0.001	----	----	----	<0.001
ø Asbestos Containing Material	1332-21-4	0.1	g		<0.1	----	----	----	<0.1
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)		<0.01	----	----	----	<0.01
ø Weight Used for % Calculation	----	0.0001	kg		0.486	----	----	----	0.658
ø Fibrous Asbestos >7mm	----	0.0004	g		<0.0004	----	----	----	<0.0004
EG005T: Total Metals by ICP-AES									
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		15	22	----	2	----
Copper	7440-50-8	5	mg/kg		32	5	----	<5	----
Lead	7439-92-1	5	mg/kg		30	9	----	<5	----
Nickel	7440-02-0	2	mg/kg		23	<2	----	<2	----
Zinc	7440-66-6	5	mg/kg		265	11	----	8	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	----	<0.1	----
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	1	mg/kg		<1	<1	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT_BH421_0.25
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-048	ES1829955-049	ES1829955-050	ES1829955-051	ES1829955-052
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
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
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	----	----	<0.05
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	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	----	----	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	----	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	----	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	----	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	----	----	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	----	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	----	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	----	----	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	----	----	----	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	----	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	----	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT_BH421_0.25
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-048	ES1829955-049	ES1829955-050	ES1829955-051	ES1829955-052
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Parathion	56-38-2	0.2	mg/kg		<0.2	----	----	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	----	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	----	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	----	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	----	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	----	----	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	----	----	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	----	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	----	----	<0.05
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Styrene	100-42-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Isopropylbenzene	98-82-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
n-Propylbenzene	103-65-1	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
sec-Butylbenzene	135-98-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
tert-Butylbenzene	98-06-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
n-Butylbenzene	104-51-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		<5	----	<5	<5	----
2-Butanone (MEK)	78-93-3	5	mg/kg		<5	----	<5	<5	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		<5	----	<5	<5	----
2-Hexanone (MBK)	591-78-6	5	mg/kg		<5	----	<5	<5	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT_BH421_0.25
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-048	ES1829955-049	ES1829955-050	ES1829955-051	ES1829955-052
					Result	Result	Result	Result	Result
EP074D: Fumigants - Continued									
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		<5	----	<5	<5	----
Chloromethane	74-87-3	5	mg/kg		<5	----	<5	<5	----
Vinyl chloride	75-01-4	5	mg/kg		<5	----	<5	<5	----
Bromomethane	74-83-9	5	mg/kg		<5	----	<5	<5	----
Chloroethane	75-00-3	5	mg/kg		<5	----	<5	<5	----
Trichlorofluoromethane	75-69-4	5	mg/kg		<5	----	<5	<5	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Iodomethane	74-88-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Trichloroethene	79-01-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Dibromomethane	74-95-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Tetrachloroethene	127-18-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Pentachloroethane	76-01-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT_BH421_0.25
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-048	ES1829955-049	ES1829955-050	ES1829955-051	ES1829955-052
				Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued								
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
Bromoform	75-25-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	----
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	<1	----	<1	<1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	<0.5	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	----	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	----	<0.5	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	----	<0.5	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	----	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	----	<0.5	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	----	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	----	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	----	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	----	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	----	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	----	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT_BH421_0.25
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-048	ES1829955-049	ES1829955-050	ES1829955-051	ES1829955-052
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg		**0.6**	**0.6**	----	**0.6**	----
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		**1.2**	**1.2**	----	**1.2**	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	----	<10	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	----	<50	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	----	<100	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	----	<100	----
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		<50	<50	----	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	<10	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	----	<10	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	----	<50	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	----	<100	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	----	<100	----
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	<50	----	<50	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	<50	----	<50	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	----	<0.2	----
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	<1	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**103**	**105**	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**96.8**	----	----	----	**112**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**98.9**	----	----	----	**77.0**
EP074S: VOC Surrogates									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT_BH421_0.25
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-048	ES1829955-049	ES1829955-050	ES1829955-051	ES1829955-052
					Result	Result	Result	Result	Result
EP074S: VOC Surrogates - Continued									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		87.2	----	98.1	101	----
Toluene-D8	2037-26-5	0.5	%		99.9	----	102	104	----
4-Bromofluorobenzene	460-00-4	0.5	%		88.6	----	96.2	95.1	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		72.7	75.7	----	83.2	----
2-Chlorophenol-D4	93951-73-6	0.5	%		74.0	78.6	----	86.2	----
2.4.6-Tribromophenol	118-79-6	0.5	%		40.0	48.1	----	56.2	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		80.6	84.6	----	91.4	----
Anthracene-d10	1719-06-8	0.5	%		86.0	90.1	----	95.4	----
4-Terphenyl-d14	1718-51-0	0.5	%		79.0	80.6	----	84.6	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		96.8	102	----	113	----
Toluene-D8	2037-26-5	0.2	%		114	92.9	----	120	----
4-Bromofluorobenzene	460-00-4	0.2	%		102	99.0	----	105	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH421_0.5	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-053	ES1829955-054	ES1829955-057	ES1829955-058	ES1829955-059
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	----	----	**6.0**	----	----
pH OX (23B)	----	0.1	pH Unit	----	----	**5.2**	----	----
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	----	<2	----	----
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	----	**70**	----	----
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	----	**70**	----	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	----	<0.020	----	----
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	----	**0.113**	----	----
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	----	**0.113**	----	----
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	----	<0.020	----	----
Peroxide Sulfur (23De)	----	0.020	% S	----	----	<0.020	----	----
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	----	<0.020	----	----
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	----	<10	----	----
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	----	<0.020	----	----
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	----	<0.020	----	----
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	----	<0.020	----	----
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	----	<10	----	----
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	----	<0.020	----	----
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	----	<0.020	----	----
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	----	<0.020	----	----
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	----	<0.020	----	----
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	----	<10	----	----
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	----	<0.020	----	----
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	----	**1.5**	----	----
Net Acidity (sulfur units)	----	0.02	% S	----	----	<0.02	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	<10	----	----
Liming Rate	----	1	kg CaCO3/t	----	----	<1	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH421_0.5	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-053	ES1829955-054	ES1829955-057	ES1829955-058	ES1829955-059
					Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued									
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		----	----	<0.02	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		----	----	<10	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t		----	----	<1	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		**12.1**	**9.7**	**4.2**	**14.0**	**10.8**
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		----	----	----	**No**	----
Asbestos (Trace)	1332-21-4	5	Fibres		----	----	----	**No**	----
Asbestos Type	1332-21-4	-	--		----	----	----	**-**	----
Sample weight (dry)	----	0.01	g		----	----	----	**577**	----
APPROVED IDENTIFIER:	----	-	--		----	----	----	**G.MORGAN**	----
EA200N: Asbestos Quantification (non-NATA)									
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g		----	----	----	<0.0004	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		----	----	----	<0.001	----
ø Asbestos Containing Material	1332-21-4	0.1	g		----	----	----	<0.1	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)		----	----	----	<0.01	----
ø Weight Used for % Calculation	----	0.0001	kg		----	----	----	**0.577**	----
ø Fibrous Asbestos >7mm	----	0.0004	g		----	----	----	<0.0004	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		**12**	**3**	<2	**3**	<2
Copper	7440-50-8	5	mg/kg		**20**	<5	<5	**30**	<5
Lead	7439-92-1	5	mg/kg		**22**	<5	<5	**261**	**31**
Nickel	7440-02-0	2	mg/kg		**10**	<2	<2	**3**	<2
Zinc	7440-66-6	5	mg/kg		**48**	<5	**18**	**150**	**47**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	**0.2**	<0.1
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	1	mg/kg		----	----	----	<1	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	----	----	<0.1	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH421_0.5	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-053	ES1829955-054	ES1829955-057	ES1829955-058	ES1829955-059
				Result	Result	Result	Result	Result
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	----
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	72-54-8/72-55-9/50-2	0.05	mg/kg	----	----	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	----	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg	----	----	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg	----	----	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg	----	----	----	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH421_0.5	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-053	ES1829955-054	ES1829955-057	ES1829955-058	ES1829955-059
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Fenthion	55-38-9	0.05	mg/kg	----	----	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg	----	----	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg	----	----	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg	----	----	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg	----	----	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	----	<0.05	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	**1.8**	<0.5	<0.5	**1.8**	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	**2.2**	<0.5	<0.5	**3.3**	**0.8**
Pyrene	129-00-0	0.5	mg/kg	**2.3**	<0.5	<0.5	**3.2**	**0.8**
Benz(a)anthracene	56-55-3	0.5	mg/kg	**0.8**	<0.5	<0.5	**1.4**	<0.5
Chrysene	218-01-9	0.5	mg/kg	**0.8**	<0.5	<0.5	**1.2**	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	**0.8**	<0.5	<0.5	**1.4**	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	**0.6**	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	**0.8**	<0.5	<0.5	**1.4**	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	**0.5**	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	**0.6**	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	**9.5**	<0.5	<0.5	**15.4**	**1.6**
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	**1.0**	<0.5	<0.5	**1.8**	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**1.3**	**0.6**	**0.6**	**2.0**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.6**	**1.2**	**1.2**	**2.3**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH421_0.5	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-053	ES1829955-054	ES1829955-057	ES1829955-058	ES1829955-059
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		**120**	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		**200**	<100	<100	<100	<100
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		**320**	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		**260**	<100	<100	**160**	<100
>C34 - C40 Fraction	----	100	mg/kg		**240**	<100	<100	<100	<100
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		**500**	<50	<50	**160**	<50
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<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		----	----	**0.0002**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH421_0.5	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-053	ES1829955-054	ES1829955-057	ES1829955-058	ES1829955-059
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
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		----	----	<0.0002	----	----
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 (PFTrDA)	72629-94-8	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		----	----	<0.0005	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		----	----	<0.0002	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		----	----	<0.0005	----	----
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									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH421_0.5	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-053	ES1829955-054	ES1829955-057	ES1829955-058	ES1829955-059
					Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued									
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		----	----	**0.0002**	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	----	**0.0002**	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	----	**0.0002**	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	**99.0**	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	----	**99.9**	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	----	**65.3**	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**78.4**	**75.4**	**78.5**	**73.5**	**75.6**
2-Chlorophenol-D4	93951-73-6	0.5	%		**76.3**	**79.1**	**81.9**	**75.4**	**78.6**
2.4.6-Tribromophenol	118-79-6	0.5	%		**44.6**	**61.7**	**57.8**	**46.8**	**56.9**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**87.5**	**82.8**	**85.7**	**80.8**	**82.5**
Anthracene-d10	1719-06-8	0.5	%		**89.6**	**87.8**	**90.6**	**86.6**	**86.8**
4-Terphenyl-d14	1718-51-0	0.5	%		**80.0**	**77.4**	**80.8**	**77.2**	**76.0**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**109**	**99.7**	**107**	**106**	**99.2**
Toluene-D8	2037-26-5	0.2	%		**102**	**86.8**	**106**	**113**	**99.4**
4-Bromofluorobenzene	460-00-4	0.2	%		**108**	**94.0**	**108**	**111**	**101**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	----	**104**	----	----
13C8-PFOA	----	0.0002	%		----	----	**90.0**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH422_1.5	SRT_BH422_3.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0
			Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-060	ES1829955-062	ES1829955-063	ES1829955-064	ES1829955-065
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	----	**5.9**	----	----	----
pH OX (23B)	----	0.1	pH Unit	----	**5.1**	----	----	----
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	<2	----	----	----
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	**77**	----	----	----
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	**77**	----	----	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	<0.020	----	----	----
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	**0.123**	----	----	----
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	**0.123**	----	----	----
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	<0.020	----	----	----
Peroxide Sulfur (23De)	----	0.020	% S	----	<0.020	----	----	----
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	<0.020	----	----	----
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	<10	----	----	----
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	<0.020	----	----	----
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	<0.020	----	----	----
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	<0.020	----	----	----
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	<10	----	----	----
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	<0.020	----	----	----
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	<0.020	----	----	----
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	<0.020	----	----	----
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	<0.020	----	----	----
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	<10	----	----	----
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	<0.020	----	----	----
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	**1.5**	----	----	----
Net Acidity (sulfur units)	----	0.02	% S	----	<0.02	----	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	<10	----	----	----
Liming Rate	----	1	kg CaCO3/t	----	<1	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH422_1.5	SRT_BH422_3.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-060	ES1829955-062	ES1829955-063	ES1829955-064	ES1829955-065
					Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued									
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		----	<0.02	----	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		----	<10	----	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t		----	<1	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		**13.4**	----	**8.4**	**9.0**	**12.6**
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		----	----	**No**	----	----
Asbestos (Trace)	1332-21-4	5	Fibres		----	----	**No**	----	----
Asbestos Type	1332-21-4	-	--		----	----	-	----	----
Sample weight (dry)	----	0.01	g		----	----	**452**	----	----
APPROVED IDENTIFIER:	----	-	--		----	----	**C.OWLER**	----	----
EA200N: Asbestos Quantification (non-NATA)									
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g		----	----	<0.0004	----	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		----	----	<0.001	----	----
ø Asbestos Containing Material	1332-21-4	0.1	g		----	----	<0.1	----	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)		----	----	<0.01	----	----
ø Weight Used for % Calculation	----	0.0001	kg		----	----	**0.452**	----	----
ø Fibrous Asbestos >7mm	----	0.0004	g		----	----	<0.0004	----	----
EG005T: Total Metals by ICP-AES									
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		<2	----	**5**	----	**5**
Copper	7440-50-8	5	mg/kg		**5**	----	**21**	----	**37**
Lead	7439-92-1	5	mg/kg		**29**	----	**142**	----	**246**
Nickel	7440-02-0	2	mg/kg		<2	----	**2**	----	**3**
Zinc	7440-66-6	5	mg/kg		**108**	----	**122**	----	**171**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	**0.2**	----	**0.8**
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	1	mg/kg		----	----	----	<1	<1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	----	----	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH422_1.5	SRT_BH422_3.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0
			Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-060	ES1829955-062	ES1829955-063	ES1829955-064	ES1829955-065
				Result	Result	Result	Result	Result
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	----
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	72-54-8/72-55-9/50-2	0.05	mg/kg	----	----	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	----	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg	----	----	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg	----	----	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg	----	----	----	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH422_1.5	SRT_BH422_3.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0
			Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-060	ES1829955-062	ES1829955-063	ES1829955-064	ES1829955-065
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Fenthion	55-38-9	0.05	mg/kg	----	----	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg	----	----	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg	----	----	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg	----	----	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg	----	----	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	----	<0.05	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	----	----	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg	----	----	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	----	<0.5	----	<0.5
Styrene	100-42-5	0.5	mg/kg	----	----	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	<0.5	----	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	----	----	<0.5	----	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	----	----	<0.5	----	<0.5
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	----	----	<0.5	----	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	----	----	<0.5	----	<0.5
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	----	----	<0.5	----	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	----	----	<0.5	----	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	----	----	<0.5	----	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	----	----	<0.5	----	<0.5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	5	mg/kg	----	----	<5	----	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	----	----	<5	----	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	----	----	<5	----	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	----	----	<5	----	<5
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	----	----	<0.5	----	<0.5
EP074D: Fumigants								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH422_1.5	SRT_BH422_3.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-060	ES1829955-062	ES1829955-063	ES1829955-064	ES1829955-065
					Result	Result	Result	Result	Result
EP074D: Fumigants - Continued									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2-Dichloropropane	78-87-5	0.5	mg/kg		----	----	<0.5	----	<0.5
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		----	----	<0.5	----	<0.5
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		----	----	<0.5	----	<0.5
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		----	----	<5	----	<5
Chloromethane	74-87-3	5	mg/kg		----	----	<5	----	<5
Vinyl chloride	75-01-4	5	mg/kg		----	----	<5	----	<5
Bromomethane	74-83-9	5	mg/kg		----	----	<5	----	<5
Chloroethane	75-00-3	5	mg/kg		----	----	<5	----	<5
Trichlorofluoromethane	75-69-4	5	mg/kg		----	----	<5	----	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg		----	----	<0.5	----	<0.5
Iodomethane	74-88-4	0.5	mg/kg		----	----	<0.5	----	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		----	----	<0.5	----	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg		----	----	<0.5	----	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		----	----	<0.5	----	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		----	----	<0.5	----	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		----	----	<0.5	----	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg		----	----	<0.5	----	<0.5
Trichloroethene	79-01-6	0.5	mg/kg		----	----	<0.5	----	<0.5
Dibromomethane	74-95-3	0.5	mg/kg		----	----	<0.5	----	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		----	----	<0.5	----	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg		----	----	<0.5	----	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg		----	----	<0.5	----	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		----	----	<0.5	----	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		----	----	<0.5	----	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		----	----	<0.5	----	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		----	----	<0.5	----	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		----	----	<0.5	----	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg		----	----	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH422_1.5	SRT_BH422_3.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-060	ES1829955-062	ES1829955-063	ES1829955-064	ES1829955-065
					Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		----	----	<0.5	----	<0.5
Bromobenzene	108-86-1	0.5	mg/kg		----	----	<0.5	----	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg		----	----	<0.5	----	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg		----	----	<0.5	----	<0.5
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		----	----	<0.5	----	<0.5
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		----	----	<0.5	----	<0.5
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		----	----	<0.5	----	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg		----	----	<0.5	----	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg		----	----	<0.5	----	<0.5
Bromoform	75-25-2	0.5	mg/kg		----	----	<0.5	----	<0.5
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		----	----	<1	----	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		**0.9**	----	<0.5	----	**1.1**
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		**2.1**	----	**0.7**	----	**2.2**
Pyrene	129-00-0	0.5	mg/kg		**2.0**	----	**0.7**	----	**2.1**
Benz(a)anthracene	56-55-3	0.5	mg/kg		**0.9**	----	<0.5	----	**0.9**
Chrysene	218-01-9	0.5	mg/kg		**0.8**	----	<0.5	----	**0.8**
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		**0.8**	----	<0.5	----	**1.0**
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		**0.9**	----	<0.5	----	**0.9**
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		**8.4**	----	**1.4**	----	**9.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH422_1.5	SRT_BH422_3.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-060	ES1829955-062	ES1829955-063	ES1829955-064	ES1829955-065
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		**1.1**	----	<0.5	----	**1.1**
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**1.4**	----	**0.6**	----	**1.4**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.7**	----	**1.2**	----	**1.7**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg		<50	----	<50	----	<50
C15 - C28 Fraction	----	100	mg/kg		<100	----	<100	----	<100
C29 - C36 Fraction	----	100	mg/kg		<100	----	<100	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	<50	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	<10	----	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	----	<50	----	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	----	<100	----	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	----	<100	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	<50	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	<50	----	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	----	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	**98.6**	**92.2**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	----	**104**	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	----	**71.1**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH422_1.5	SRT_BH422_3.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-060	ES1829955-062	ES1829955-063	ES1829955-064	ES1829955-065
					Result	Result	Result	Result	Result
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		----	----	87.0	----	85.6
Toluene-D8	2037-26-5	0.5	%		----	----	98.3	----	104
4-Bromofluorobenzene	460-00-4	0.5	%		----	----	89.9	----	98.9
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		76.2	----	74.6	----	74.0
2-Chlorophenol-D4	93951-73-6	0.5	%		79.1	----	77.7	----	77.2
2.4.6-Tribromophenol	118-79-6	0.5	%		51.4	----	57.7	----	57.0
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		84.2	----	81.8	----	81.7
Anthracene-d10	1719-06-8	0.5	%		87.4	----	87.0	----	87.0
4-Terphenyl-d14	1718-51-0	0.5	%		77.0	----	78.5	----	77.3
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		104	----	97.1	----	95.8
Toluene-D8	2037-26-5	0.2	%		106	----	112	----	119
4-Bromofluorobenzene	460-00-4	0.2	%		104	----	99.5	----	115

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH426_2.0	SRT_BH426_4.0	SRT_BH426_5.0	QCA101	QCA102
			Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-067	ES1829955-069	ES1829955-070	ES1829955-074	ES1829955-075
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	----	5.9	5.9	----	----
pH OX (23B)	----	0.1	pH Unit	----	5.2	5.3	----	----
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	<2	<2	----	----
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	70	69	----	----
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	70	69	----	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	<0.020	<0.020	----	----
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	0.112	0.110	----	----
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	0.112	0.110	----	----
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	<0.020	<0.020	----	----
Peroxide Sulfur (23De)	----	0.020	% S	----	<0.020	<0.020	----	----
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	<0.020	<0.020	----	----
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	<10	<10	----	----
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	<0.020	<0.020	----	----
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	<0.020	<0.020	----	----
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	<0.020	<0.020	----	----
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	<10	<10	----	----
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	<0.020	<0.020	----	----
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	<0.020	<0.020	----	----
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	<0.020	<0.020	----	----
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	<0.020	<0.020	----	----
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	<10	<10	----	----
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	<0.020	<0.020	----	----
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	1.5	1.5	----	----
Net Acidity (sulfur units)	----	0.02	% S	----	<0.02	<0.02	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	<10	<10	----	----
Liming Rate	----	1	kg CaCO3/t	----	<1	<1	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH426_2.0	SRT_BH426_4.0	SRT_BH426_5.0	QCA101	QCA102
			Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-067	ES1829955-069	ES1829955-070	ES1829955-074	ES1829955-075
				Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued								
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	<0.02	<0.02	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	<10	<10	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	<1	<1	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**6.1**	**16.5**	----	**3.0**	**10.6**
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	----	**No**	----
Asbestos (Trace)	1332-21-4	5	Fibres	----	----	----	**No**	----
Asbestos Type	1332-21-4	-	--	----	----	----	-	----
Sample weight (dry)	----	0.01	g	----	----	----	**35.7**	----
APPROVED IDENTIFIER:	----	-	--	----	----	----	**C.OWLER**	----
EA200N: Asbestos Quantification (non-NATA)								
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	----	----	----	<0.0004	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	----	----	----	<0.001	----
ø Asbestos Containing Material	1332-21-4	0.1	g	----	----	----	<0.1	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)	----	----	----	<0.01	----
ø Weight Used for % Calculation	----	0.0001	kg	----	----	----	**0.0357**	----
ø Fibrous Asbestos >7mm	----	0.0004	g	----	----	----	<0.0004	----
EG005T: 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	<2	<2	----	<2	**9**
Copper	7440-50-8	5	mg/kg	<5	<5	----	<5	**19**
Lead	7439-92-1	5	mg/kg	<5	<5	----	<5	**23**
Nickel	7440-02-0	2	mg/kg	<2	<2	----	<2	**6**
Zinc	7440-66-6	5	mg/kg	**10**	**6**	----	**5**	**53**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	<0.1	<0.1
EP035G: Total Phenol by Discrete Analyser								
Phenols (Total)	----	1	mg/kg	----	----	----	<1	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	<0.1	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH426_2.0	SRT_BH426_4.0	SRT_BH426_5.0	QCA101	QCA102
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-067	ES1829955-069	ES1829955-070	ES1829955-074	ES1829955-075
					Result	Result	Result	Result	Result
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	----
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	72-54-8/72-55-9/50-2	0.05	mg/kg		----	----	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg		----	----	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg		----	----	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg		----	----	----	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH426_2.0	SRT_BH426_4.0	SRT_BH426_5.0	QCA101	QCA102
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-067	ES1829955-069	ES1829955-070	ES1829955-074	ES1829955-075
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Fenthion	55-38-9	0.05	mg/kg		----	----	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg		----	----	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg		----	----	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg		----	----	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg		----	----	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	----	<0.05	----
EP074A: Monocyclic Aromatic Hydrocarbons									
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	----
Styrene	100-42-5	0.5	mg/kg		----	----	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		----	----	----	<0.5	----
Isopropylbenzene	98-82-8	0.5	mg/kg		----	----	----	<0.5	----
n-Propylbenzene	103-65-1	0.5	mg/kg		----	----	----	<0.5	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		----	----	----	<0.5	----
sec-Butylbenzene	135-98-8	0.5	mg/kg		----	----	----	<0.5	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		----	----	----	<0.5	----
tert-Butylbenzene	98-06-6	0.5	mg/kg		----	----	----	<0.5	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg		----	----	----	<0.5	----
n-Butylbenzene	104-51-8	0.5	mg/kg		----	----	----	<0.5	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		----	----	----	<5	----
2-Butanone (MEK)	78-93-3	5	mg/kg		----	----	----	<5	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		----	----	----	<5	----
2-Hexanone (MBK)	591-78-6	5	mg/kg		----	----	----	<5	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		----	----	----	<0.5	----
EP074D: Fumigants									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH426_2.0	SRT_BH426_4.0	SRT_BH426_5.0	QCA101	QCA102
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-067	ES1829955-069	ES1829955-070	ES1829955-074	ES1829955-075
					Result	Result	Result	Result	Result
EP074D: Fumigants - Continued									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		----	----	----	<0.5	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		----	----	----	<0.5	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		----	----	----	<0.5	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		----	----	----	<5	----
Chloromethane	74-87-3	5	mg/kg		----	----	----	<5	----
Vinyl chloride	75-01-4	5	mg/kg		----	----	----	<5	----
Bromomethane	74-83-9	5	mg/kg		----	----	----	<5	----
Chloroethane	75-00-3	5	mg/kg		----	----	----	<5	----
Trichlorofluoromethane	75-69-4	5	mg/kg		----	----	----	<5	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		----	----	----	<0.5	----
Iodomethane	74-88-4	0.5	mg/kg		----	----	----	<0.5	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		----	----	----	<0.5	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		----	----	----	<0.5	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		----	----	----	<0.5	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		----	----	----	<0.5	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		----	----	----	<0.5	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		----	----	----	<0.5	----
Trichloroethene	79-01-6	0.5	mg/kg		----	----	----	<0.5	----
Dibromomethane	74-95-3	0.5	mg/kg		----	----	----	<0.5	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		----	----	----	<0.5	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		----	----	----	<0.5	----
Tetrachloroethene	127-18-4	0.5	mg/kg		----	----	----	<0.5	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		----	----	----	<0.5	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		----	----	----	<0.5	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		----	----	----	<0.5	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		----	----	----	<0.5	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		----	----	----	<0.5	----
Pentachloroethane	76-01-7	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		----	----	----	<0.5	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		----	----	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH426_2.0	SRT_BH426_4.0	SRT_BH426_5.0	QCA101	QCA102
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-067	ES1829955-069	ES1829955-070	ES1829955-074	ES1829955-075
					Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		----	----	----	<0.5	----
Bromobenzene	108-86-1	0.5	mg/kg		----	----	----	<0.5	----
2-Chlorotoluene	95-49-8	0.5	mg/kg		----	----	----	<0.5	----
4-Chlorotoluene	106-43-4	0.5	mg/kg		----	----	----	<0.5	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		----	----	----	<0.5	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		----	----	----	<0.5	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		----	----	----	<0.5	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		----	----	----	<0.5	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		----	----	----	<0.5	----
Bromodichloromethane	75-27-4	0.5	mg/kg		----	----	----	<0.5	----
Dibromochloromethane	124-48-1	0.5	mg/kg		----	----	----	<0.5	----
Bromoform	75-25-2	0.5	mg/kg		----	----	----	<0.5	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		----	----	----	<1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	**2.0**
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	**0.6**
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	----	<0.5	**2.6**
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	----	<0.5	**2.7**
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	**1.0**
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	**1.0**
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	**1.0**
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	**1.0**
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg		<0.5	<0.5	----	<0.5	**11.9**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH426_2.0	SRT_BH426_4.0	SRT_BH426_5.0	QCA101	QCA102
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-067	ES1829955-069	ES1829955-070	ES1829955-074	ES1829955-075
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	----	<0.5	**1.2**
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	----	**0.6**	**1.5**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	----	**1.2**	**1.8**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	----	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	----	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	----	<100	**130**
C29 - C36 Fraction	----	100	mg/kg		<100	<100	----	<100	**200**
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	----	<50	**330**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	----	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	----	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	----	<100	**250**
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	----	<100	**240**
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	----	<50	**490**
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	----	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	**88.1**	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	----	**95.1**	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	----	**68.0**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH426_2.0	SRT_BH426_4.0	SRT_BH426_5.0	QCA101	QCA102
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-067	ES1829955-069	ES1829955-070	ES1829955-074	ES1829955-075
					Result	Result	Result	Result	Result
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		----	----	----	93.1	----
Toluene-D8	2037-26-5	0.5	%		----	----	----	102	----
4-Bromofluorobenzene	460-00-4	0.5	%		----	----	----	91.8	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		76.1	78.2	----	78.6	77.6
2-Chlorophenol-D4	93951-73-6	0.5	%		79.5	80.2	----	81.6	77.2
2.4.6-Tribromophenol	118-79-6	0.5	%		55.0	55.7	----	50.0	35.2
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		84.5	85.9	----	87.3	86.9
Anthracene-d10	1719-06-8	0.5	%		90.2	90.3	----	91.3	92.0
4-Terphenyl-d14	1718-51-0	0.5	%		80.5	81.4	----	83.0	82.3
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		99.6	104	----	104	110
Toluene-D8	2037-26-5	0.2	%		99.7	104	----	117	108
4-Bromofluorobenzene	460-00-4	0.2	%		102	103	----	106	105

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	QCA103	Trip Spike 8	Trip Spike TS100	Trip Blank	Trip Blank TB100
			Client sampling date / time	06-Oct-2018 00:00	02-Oct-2018 00:00	02-Oct-2018 00:00	05-Oct-2018 00:00	05-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-076	ES1829955-077	ES1829955-078	ES1829955-079	ES1829955-080
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	8.5	----	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	<2	----	----	----	----
Copper	7440-50-8	5	mg/kg	<5	----	----	----	----
Lead	7439-92-1	5	mg/kg	<5	----	----	----	----
Nickel	7440-02-0	2	mg/kg	<2	----	----	----	----
Zinc	7440-66-6	5	mg/kg	13	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
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	1.3	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	1.4	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	0.6	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	0.6	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	0.6	----	----	----	----
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	5.6	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	0.7	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	1.0	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.3	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	25	18	<10	<10

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QCA103	Trip Spike 8	Trip Spike TS100	Trip Blank	Trip Blank TB100
				Client sampling date / time	06-Oct-2018 00:00	02-Oct-2018 00:00	02-Oct-2018 00:00	05-Oct-2018 00:00	05-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-076	ES1829955-077	ES1829955-078	ES1829955-079	ES1829955-080
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
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	29	21	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	16	12	<10	<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	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	5.9	4.3	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	0.9	0.6	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	4.4	3.2	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	1.9	1.4	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	13.1	9.5	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	6.3	4.6	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		73.2	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		76.7	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		53.7	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		80.0	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		87.6	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		77.5	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		103	106	110	108	117
Toluene-D8	2037-26-5	0.2	%		100	108	115	106	113

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QCA103	Trip Spike 8	Trip Spike TS100	Trip Blank	Trip Blank TB100
				Client sampling date / time	06-Oct-2018 00:00	02-Oct-2018 00:00	02-Oct-2018 00:00	05-Oct-2018 00:00	05-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-076	ES1829955-077	ES1829955-078	ES1829955-079	ES1829955-080
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%		**101**	**104**	**110**	**106**	**114**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	Trip Control Spike	TSC 8	----	----	----
			Client sampling date / time	02-Oct-2018 00:00	02-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES1829955-083	ES1829955-084	--------	--------	--------
				Result	Result	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	**18**	**34**	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	**21**	**40**	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg	**12**	**22**	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg	**4.3**	**8.3**	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	**0.6**	**1.2**	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	**3.1**	**5.8**	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	**1.4**	**2.4**	----	----	----
^ **Sum of BTEX**	----	0.2	mg/kg	**9.4**	**17.7**	----	----	----
^ **Total Xylenes**	----	0.5	mg/kg	**4.5**	**8.2**	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	<1	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**107**	**102**	----	----	----
Toluene-D8	2037-26-5	0.2	%	**96.9**	**113**	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	**96.3**	**115**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	RB100	RB103	----	----	----
			Client sampling date / time	06-Oct-2018 00:00	07-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES1829955-071	ES1829955-072	--------	--------	--------
				Result	Result	----	----	----
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
^ **Total Polychlorinated biphenyls**	----	1	µg/L	<1	<1	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	----	----	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	----	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	----	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	----	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	----	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	----	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	----	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	----	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	----	----	----
^ **Total Chlordane (sum)**	----	0.5	µg/L	<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	RB100	RB103	----	----	----
				Client sampling date / time	06-Oct-2018 00:00	07-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1829955-071	ES1829955-072	--------	--------	--------
					Result	Result	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L		<0.5	<0.5	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L		<0.5	<0.5	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L		<0.5	<0.5	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L		<0.5	<0.5	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L		<2.0	<2.0	----	----	----
Dimethoate	60-51-5	0.5	µg/L		<0.5	<0.5	----	----	----
Diazinon	333-41-5	0.5	µg/L		<0.5	<0.5	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L		<0.5	<0.5	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L		<2.0	<2.0	----	----	----
Malathion	121-75-5	0.5	µg/L		<0.5	<0.5	----	----	----
Fenthion	55-38-9	0.5	µg/L		<0.5	<0.5	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L		<0.5	<0.5	----	----	----
Parathion	56-38-2	2.0	µg/L		<2.0	<2.0	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L		<0.5	<0.5	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L		<0.5	<0.5	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L		<0.5	<0.5	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L		<0.5	<0.5	----	----	----
Prothiofos	34643-46-4	0.5	µg/L		<0.5	<0.5	----	----	----
Ethion	563-12-2	0.5	µg/L		<0.5	<0.5	----	----	----
Carbophenothion	786-19-6	0.5	µg/L		<0.5	<0.5	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L		<0.5	<0.5	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	1	µg/L		<1	<1	----	----	----
Toluene	108-88-3	2	µg/L		<2	<2	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	----	----	----
Styrene	100-42-5	5	µg/L		<5	<5	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	----	----	----
Isopropylbenzene	98-82-8	5	µg/L		<5	<5	----	----	----
n-Propylbenzene	103-65-1	5	µg/L		<5	<5	----	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L		<5	<5	----	----	----
sec-Butylbenzene	135-98-8	5	µg/L		<5	<5	----	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L		<5	<5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	RB100	RB103	----	----	----
				Client sampling date / time	06-Oct-2018 00:00	07-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1829955-071	ES1829955-072	--------	--------	--------
					Result	Result	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued									
tert-Butylbenzene	98-06-6	5	µg/L		<5	<5	----	----	----
p-Isopropyltoluene	99-87-6	5	µg/L		<5	<5	----	----	----
n-Butylbenzene	104-51-8	5	µg/L		<5	<5	----	----	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	50	µg/L		<50	<50	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L		<50	<50	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L		<50	<50	----	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L		<50	<50	----	----	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	5	µg/L		<5	<5	----	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	5	µg/L		<5	<5	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L		<5	<5	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L		<5	<5	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L		<5	<5	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L		<5	<5	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	50	µg/L		<50	<50	----	----	----
Chloromethane	74-87-3	50	µg/L		<50	<50	----	----	----
Vinyl chloride	75-01-4	50	µg/L		<50	<50	----	----	----
Bromomethane	74-83-9	50	µg/L		<50	<50	----	----	----
Chloroethane	75-00-3	50	µg/L		<50	<50	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L		<50	<50	----	----	----
1.1-Dichloroethene	75-35-4	5	µg/L		<5	<5	----	----	----
Iodomethane	74-88-4	5	µg/L		<5	<5	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L		<5	<5	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L		<5	<5	----	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L		<5	<5	----	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L		<5	<5	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L		<5	<5	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L		<5	<5	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L		<5	<5	----	----	----
Trichloroethene	79-01-6	5	µg/L		<5	<5	----	----	----
Dibromomethane	74-95-3	5	µg/L		<5	<5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	RB100	RB103	----	----	----
				Client sampling date / time	06-Oct-2018 00:00	07-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1829955-071	ES1829955-072	--------	--------	--------
					Result	Result	----	----	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	<5	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L		<5	<5	----	----	----
Tetrachloroethene	127-18-4	5	µg/L		<5	<5	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	<5	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L		<5	<5	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L		<5	<5	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	<5	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	----	----	----
Pentachloroethane	76-01-7	5	µg/L		<5	<5	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	----	----	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	----	----	----
Bromobenzene	108-86-1	5	µg/L		<5	<5	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	----	----	----
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	----	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	----	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	----	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	----	----	----
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	----	----	----
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	----	----	----
Bromoform	75-25-2	5	µg/L		<5	<5	----	----	----
EP074H: Naphthalene									
Naphthalene	91-20-3	5	µg/L		<5	<5	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	RB100	RB103	----	----	----
				Client sampling date / time	06-Oct-2018 00:00	07-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1829955-071	ES1829955-072	--------	--------	--------
					Result	Result	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	----	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	<0.5	----	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	<0.5	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		**20**	<20	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	<20	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	<100	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	<100	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	----	----	----
Toluene	108-88-3	2	µg/L		<2	<2	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	RB100	RB103	----	----	----
				Client sampling date / time	06-Oct-2018 00:00	07-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1829955-071	ES1829955-072	--------	--------	--------
					Result	Result	----	----	----
EP080: BTEXN - Continued									
^ Total Xylenes	----	2	µg/L		<2	<2	----	----	----
^ Sum of BTEX	----	1	µg/L		<1	<1	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		84.5	100.0	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		86.7	98.5	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		71.4	80.3	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		90.5	98.3	----	----	----
Toluene-D8	2037-26-5	5	%		116	105	----	----	----
4-Bromofluorobenzene	460-00-4	5	%		94.2	98.8	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		25.0	24.1	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		54.1	59.5	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		40.2	92.4	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		68.1	76.9	----	----	----
Anthracene-d10	1719-06-8	1.0	%		82.0	85.0	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		88.4	86.6	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		92.1	100	----	----	----
Toluene-D8	2037-26-5	2	%		117	107	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		91.5	94.6	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	SRT-BH420-0.5 - 06-Oct-2018 00:00	Pale brown sandy soil plus one piece of bonded asbestos cement sheeting approximately 12 x 9 x 2mm.
EA200: Description	SRT_BH408_0.2 - 06-Oct-2018 00:00	Pale brown sandy soil.
EA200: Description	SRT_BH409_0.5 - 06-Oct-2018 00:00	Pale brown sandy soil.
EA200: Description	SRT_BH410_0.2 - 06-Oct-2018 00:00	Mid brown sandy soil.
EA200: Description	SRT_BH411_0.15 - 06-Oct-2018 00:00	Mid brown sandy soil.
EA200: Description	SRT_BH412_0.5 - 06-Oct-2018 00:00	Mid brown sandy soil.
EA200: Description	SRT_BH412_1.0 - 06-Oct-2018 00:00	Mid grey sandy soil.
EA200: Description	SRT_BH416_0.25 - 06-Oct-2018 00:00	Mid grey sandy soil.
EA200: Description	SRT_BH416_1.0 - 06-Oct-2018 00:00	Mid grey sandy soil.
EA200: Description	SRT_BH417_0.5 - 06-Oct-2018 00:00	A collection of crushed building debris.
EA200: Description	SRT_BH421_0.25 - 06-Oct-2018 00:00	A collection of crushed building debris.
EA200: Description	SRT_BH422_0.5 - 07-Oct-2018 00:00	Mid grey sandy soil.
EA200: Description	SRT_BH426_0.1 - 07-Oct-2018 00:00	Pale brown sandy soil with slag debris.
EA200: Description	QCA101 - 06-Oct-2018 00:00	Pale brown sandy soil.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	29	129
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	***Low***	***High***
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES1829955**	Page	: 1 of 45
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: SYDNEY METRO	Date Samples Received	: 10-Oct-2018
Order number	: .	Date Analysis Commenced	: 11-Oct-2018
C-O-C number	: ----	Issue Date	: 17-Oct-2018
Sampler	: ----		
Site	: Waterloo Station		
Quote number	: SY/698/17 C V4		
No. of samples received	: 84		
No. of samples analysed	: 64		

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

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

This Quality Control Report contains the following information:

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

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*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini		Sydney Organics, Smithfield, NSW
Gerrad Morgan	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA029-A: pH Measurements (QC Lot: 1981762)									
EB1824559-001	Anonymous	EA029: pH KCl (23A)	----	0.1	pH Unit	7.7	6.8	12.4	0% - 20%
		EA029: pH OX (23B)	----	0.1	pH Unit	3.1	3.0	3.28	0% - 20%
ES1829899-007	Anonymous	EA029: pH KCl (23A)	----	0.1	pH Unit	6.0	6.3	4.88	0% - 20%
		EA029: pH OX (23B)	----	0.1	pH Unit	6.9	6.9	0.00	0% - 20%
EA029-A: pH Measurements (QC Lot: 1981763)									
ES1829955-028	SRT_BH410_3.0	EA029: pH KCl (23A)	----	0.1	pH Unit	5.9	5.8	1.71	0% - 20%
		EA029: pH OX (23B)	----	0.1	pH Unit	4.5	4.5	0.00	0% - 20%
EA029-B: Acidity Trail (QC Lot: 1981762)									
EB1824559-001	Anonymous	EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	0.188	0.160	16.1	No Limit
		EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	0.188	0.160	16.1	No Limit
		EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	<2	0.00	No Limit
		EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	118	100	16.1	0% - 20%
		EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	118	100	16.1	0% - 20%
ES1829899-007	Anonymous	EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	5	4	0.00	No Limit
		EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	<2	0.00	No Limit
		EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	<2	0.00	No Limit
EA029-B: Acidity Trail (QC Lot: 1981763)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA029-B: Acidity Trail (QC Lot: 1981763) - continued									
ES1829955-028	SRT_BH410_3.0	EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	0.127	0.128	1.32	No Limit
		EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	0.118	0.118	0.00	No Limit
		EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	6	6	0.00	No Limit
		EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	79	80	1.32	0% - 20%
		EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	74	74	0.00	0% - 20%
EA029-C: Sulfur Trail (QC Lot: 1981762)									
EB1824559-001	Anonymous	EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Sulfur (23De)	----	0.02	% S	0.065	0.070	7.55	No Limit
		EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	0.065	0.070	7.55	No Limit
		EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	40	44	7.55	No Limit
ES1829899-007	Anonymous	EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-C: Sulfur Trail (QC Lot: 1981763)									
ES1829955-028	SRT_BH410_3.0	EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-D: Calcium Values (QC Lot: 1981762)									
EB1824559-001	Anonymous	EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	0.032	0.032	0.00	No Limit
		EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	0.042	0.039	5.44	No Limit
		EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	<10	0.00	No Limit
ES1829899-007	Anonymous	EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	0.106	0.111	4.42	No Limit
		EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	0.160	0.177	9.67	No Limit
		EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	0.054	0.066	19.2	No Limit
		EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	0.043	0.052	19.2	No Limit
		EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	27	33	19.2	No Limit
EA029-D: Calcium Values (QC Lot: 1981763)									
ES1829955-028	SRT_BH410_3.0	EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	0.027	0.026	0.00	No Limit
		EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	0.030	0.028	6.65	No Limit
		EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	<0.020	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA029-D: Calcium Values (QC Lot: 1981763) - continued									
ES1829955-028	SRT_BH410_3.0	EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-E: Magnesium Values (QC Lot: 1981762)									
EB1824559-001	Anonymous	EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	<10	0.00	No Limit
ES1829899-007	Anonymous	EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	0.020	0.020	0.00	No Limit
		EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	0.020	0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	0.026	0.027	0.00	No Limit
		EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	16	17	0.00	No Limit
EA029-E: Magnesium Values (QC Lot: 1981763)									
ES1829955-028	SRT_BH410_3.0	EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-F: Excess Acid Neutralising Capacity (QC Lot: 1981762)									
ES1829899-007	Anonymous	EA029: Excess Acid Neutralising Capacity (23Q)	----	0.02	% CaCO3	0.207	0.218	5.44	0% - 50%
		EA029: sulfidic - Excess Acid Neutralising Capacity (s-23Q)	----	0.02	% S	0.066	0.070	5.44	No Limit
		EA029: acidity - Excess Acid Neutralising Capacity (a-23Q)	----	10	mole H+ / t	41	44	5.44	No Limit
EA029-H: Acid Base Accounting (QC Lot: 1981762)									
EB1824559-001	Anonymous	EA029: ANC Fineness Factor	----	0.5	-	1.5	1.5	0.00	No Limit
		EA029: Net Acidity (sulfur units)	----	0.02	% S	0.15	0.13	12.2	No Limit
		EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	0.15	0.13	12.2	No Limit
		EA029: Liming Rate	----	1	kg CaCO3/t	7	6	0.00	No Limit
		EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	7	6	0.00	No Limit
		EA029: Net Acidity (acidity units)	----	10	mole H+ / t	92	81	12.2	No Limit
		EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	92	81	12.2	No Limit
ES1829899-007	Anonymous	EA029: ANC Fineness Factor	----	0.5	-	1.5	1.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA029-H: Acid Base Accounting (QC Lot: 1981762) - continued									
ES1829899-007	Anonymous	EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA029: Liming Rate	----	1	kg CaCO3/t	<1	<1	0.00	No Limit
		EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	<1	0.00	No Limit
		EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	<10	0.00	No Limit
		EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-H: Acid Base Accounting (QC Lot: 1981763)									
ES1829955-028	SRT_BH410_3.0	EA029: ANC Fineness Factor	----	0.5	-	1.5	1.5	0.00	No Limit
		EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA029: Liming Rate	----	1	kg CaCO3/t	<1	<1	0.00	No Limit
		EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	<1	0.00	No Limit
		EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	<10	0.00	No Limit
		EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 1977344)									
ES1829949-003	Anonymous	EA055: Moisture Content	----	0.1	%	13.9	13.1	6.40	0% - 50%
ES1829949-015	Anonymous	EA055: Moisture Content	----	0.1	%	17.7	17.5	0.874	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 1977345)									
ES1829955-014	SRT_BH408_2.0	EA055: Moisture Content	----	0.1	%	4.8	4.5	6.48	No Limit
ES1829955-033	SRT_BH411_2.0	EA055: Moisture Content	----	0.1	%	3.3	3.4	0.00	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 1977346)									
ES1829955-046	SRT_BH416_3.0	EA055: Moisture Content	----	0.1	%	6.2	5.8	5.22	No Limit
ES1829955-060	SRT_BH422_1.5	EA055: Moisture Content	----	0.1	%	13.4	13.8	3.30	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 1982016)									
ES1829955-001	SRT-BH420-0.5	EG005T: Zinc	7440-66-6	5	mg/kg	804	786	2.33	0% - 20%
ES1829955-001	SRT-BH420-0.5	EG005T: Cadmium	7440-43-9	1	mg/kg	2	1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	9	12	30.2	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	8	14	48.9	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	11	<5	78.7	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	76	# 124	48.2	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	618	586	5.34	0% - 20%
ES1829955-024	SRT_BH410_0.8	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	3	3	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	10	67.8	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.00	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 1982017)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005T: Total Metals by ICP-AES (QC Lot: 1982017) - continued									
ES1829955-044	SRT_BH416_1.5	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	7	<5	29.7	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	6	<5	0.00	No Limit
ES1829955-060	SRT_BH422_1.5	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	<2	5	87.9	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	3	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	5	16	104	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	29	# 88	100.0	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	108	# 132	20.2	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1982015)									
ES1829955-001	SRT-BH420-0.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.6	0.6	0.00	No Limit
ES1829955-024	SRT_BH410_0.8	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1982018)									
ES1829955-044	SRT_BH416_1.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1829955-060	SRT_BH422_1.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.1	0.00	No Limit
EP035G: Total Phenol by Discrete Analyser (QC Lot: 1976601)									
ES1829955-001	SRT-BH420-0.5	EP035G: Phenols (Total)	----	1	mg/kg	<1	<1	0.00	No Limit
ES1829955-049	SRT_BH417_1.5	EP035G: Phenols (Total)	----	1	mg/kg	<1	<1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 1975401)									
ES1829955-001	SRT-BH420-0.5	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1829955-058	SRT_BH422_0.5	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1975400)									
ES1829955-001	SRT-BH420-0.5	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1975400) - continued									
ES1829955-001	SRT-BH420-0.5	EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
ES1829955-058	SRT_BH422_0.5	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1975400)									
ES1829955-001	SRT-BH420-0.5	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1975400) - continued									
ES1829955-001	SRT-BH420-0.5	EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
ES1829955-058	SRT_BH422_0.5	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1975831)									
ES1829955-011	SRT_BH408_0.5	EP074: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP074: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1975831) - continued									
ES1829955-011	SRT_BH408_0.5	EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1829955-051	SRT_BH417_3.0	EP074: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP074: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074B: Oxygenated Compounds (QC Lot: 1975831)									
ES1829955-011	SRT_BH408_0.5	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.00	No Limit
ES1829955-051	SRT_BH417_3.0	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.00	No Limit
EP074C: Sulfonated Compounds (QC Lot: 1975831)									
ES1829955-011	SRT_BH408_0.5	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1829955-051	SRT_BH417_3.0	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074D: Fumigants (QC Lot: 1975831)									
ES1829955-011	SRT_BH408_0.5	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1829955-051	SRT_BH417_3.0	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074D: Fumigants (QC Lot: 1975831) - continued									
ES1829955-051	SRT_BH417_3.0	EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 1975831)									
ES1829955-011	SRT_BH408_0.5	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.00	No Limit
ES1829955-051	SRT_BH417_3.0	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074E: Halogenated Aliphatic Compounds (QC Lot: 1975831) - continued									
ES1829955-051	SRT_BH417_3.0	EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 1975831)									
ES1829955-011	SRT_BH408_0.5	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1829955-051	SRT_BH417_3.0	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 1975831)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074G: Trihalomethanes (QC Lot: 1975831) - continued									
ES1829955-011	SRT_BH408_0.5	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1829955-051	SRT_BH417_3.0	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074H: Naphthalene (QC Lot: 1975831)									
ES1829955-011	SRT_BH408_0.5	EP074: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES1829955-051	SRT_BH417_3.0	EP074: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1975399)									
ES1829955-001	SRT-BH420-0.5	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	0.5	0.6	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	1.3	1.1	12.8	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	1.4	1.2	15.6	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	0.6	0.5	20.4	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	0.6	0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	0.8	0.7	16.5	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	0.8	0.6	20.4	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	6.0	5.2	14.3	0% - 50%
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	0.9	0.7	26.4	No Limit
ES1829955-058	SRT_BH422_0.5	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	1.8	2.3	25.3	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	0.7	28.8	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	3.3	5.0	40.7	0% - 50%
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	3.2	5.0	41.9	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1975399) - continued									
ES1829955-058	SRT_BH422_0.5	EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	1.4	2.2	46.1	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	1.2	2.0	47.3	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	1.4	2.4	51.1	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	0.6	1.0	48.9	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	1.4	2.3	51.2	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	0.5	0.9	54.3	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	0.6	1.1	56.3	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	15.4	# 24.9	47.1	0% - 20%
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	1.8	3.0	49.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1975402)									
ES1829955-002	SRT-BH420-1.0	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	0.8	0.7	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	0.9	0.8	18.5	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	0.9	0.7	18.3	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	2.6	2.2	16.7	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1829955-036	SRT_BH412_0.5	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	2.8	3.2	16.8	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	0.8	0.8	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	3.4	3.7	8.34	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1975402) - continued									
ES1829955-036	SRT_BH412_0.5	EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	3.6	3.8	5.44	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	1.2	1.4	7.98	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	1.2	1.3	13.8	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	1.2	1.4	10.9	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	1.2	1.4	13.4	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	0.6	0.6	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	16.0	18.1	12.3	0% - 20%
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	1.4	1.7	18.1	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1975410)									
ES1829925-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1829925-011	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1975410) - continued									
ES1829925-011	Anonymous	EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1975398)									
ES1829955-001	SRT-BH420-0.5	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1829955-058	SRT_BH422_0.5	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1975403)									
ES1829955-002	SRT-BH420-1.0	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1829955-036	SRT_BH412_0.5	EP071: C15 - C28 Fraction	----	100	mg/kg	160	120	30.6	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	140	170	21.2	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1975411)									
ES1829925-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1829925-011	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1975823)									
ES1829955-001	SRT-BH420-0.5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1829955-031	SRT_BH411_1.0	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1975829)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1975829) - continued									
ES1829824-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1829955-067	SRT_BH426_2.0	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1975830)									
ES1829955-011	SRT_BH408_0.5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1829955-051	SRT_BH417_3.0	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1982637)									
ES1830060-024	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1830060-011	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1975398)									
ES1829955-001	SRT-BH420-0.5	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1829955-058	SRT_BH422_0.5	EP071: >C16 - C34 Fraction	----	100	mg/kg	160	120	32.6	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1975403)									
ES1829955-002	SRT-BH420-1.0	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1829955-036	SRT_BH412_0.5	EP071: >C16 - C34 Fraction	----	100	mg/kg	240	240	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	160	200	21.3	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1975411)									
ES1829925-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1829925-011	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1975823)									
ES1829955-001	SRT-BH420-0.5	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1829955-031	SRT_BH411_1.0	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1975829)									
ES1829824-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1829955-067	SRT_BH426_2.0	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1975830)									
ES1829955-011	SRT_BH408_0.5	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1829955-051	SRT_BH417_3.0	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1982637)									
ES1830060-024	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1830060-011	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080: BTEXN (QC Lot: 1975823)									
ES1829955-001	SRT-BH420-0.5	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES1829955-031	SRT_BH411_1.0	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP080: BTEXN (QC Lot: 1975829)									
ES1829824-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES1829955-067	SRT_BH426_2.0	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP080: BTEXN (QC Lot: 1975830)									
ES1829955-011	SRT_BH408_0.5	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080: BTEXN (QC Lot: 1975830) - continued									
ES1829955-051	SRT_BH417_3.0	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP080: BTEXN (QC Lot: 1982637)									
ES1830060-024	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES1830060-011	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 1975434)									
ES1829915-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.0002	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
ES1829915-011	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0005	0.0005	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 1975434)									
ES1829915-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 1975434) - continued									
ES1829915-001	Anonymous	EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.00	No Limit
ES1829915-011	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 1975434)									
ES1829915-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
ES1829915-011	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 1975434) - continued									
ES1829915-011	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 1975434)									
ES1829915-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
ES1829915-011	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020T: Total Metals by ICP-MS (QC Lot: 1978098)									
ES1829923-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
ES1829954-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.001	0.006	126	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1977233)									
ES1829516-060	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1977233) - continued									
ES1829966-007	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1975922)									
ES1829955-072	RB103	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.00	No Limit
ES1829890-001	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.00	No Limit
EP074B: Oxygenated Compounds (QC Lot: 1975922)									
ES1829955-072	RB103	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.00	No Limit
ES1829890-001	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074B: Oxygenated Compounds (QC Lot: 1975922) - continued									
ES1829890-001	Anonymous	EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.00	No Limit
EP074C: Sulfonated Compounds (QC Lot: 1975922)									
ES1829955-072	RB103	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.00	No Limit
ES1829890-001	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.00	No Limit
EP074D: Fumigants (QC Lot: 1975922)									
ES1829955-072	RB103	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.00	No Limit
ES1829890-001	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 1975922)									
ES1829955-072	RB103	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.00	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074E: Halogenated Aliphatic Compounds (QC Lot: 1975922) - continued									
ES1829955-072	RB103	EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.00	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.00	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.00	No Limit
ES1829890-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.00	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.00	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.00	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 1975922)									
ES1829955-072	RB103	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074F: Halogenated Aromatic Compounds (QC Lot: 1975922) - continued									
ES1829955-072	RB103	EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.00	No Limit
ES1829890-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 1975922)									
ES1829955-072	RB103	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.00	No Limit
ES1829890-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.00	No Limit
EP074H: Naphthalene (QC Lot: 1975922)									
ES1829955-072	RB103	EP074: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
ES1829890-001	Anonymous	EP074: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1975921)									
ES1829890-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	150	130	9.10	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1975921)									
ES1829890-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	120	110	9.60	No Limit
EP080: BTEXN (QC Lot: 1975921)									
ES1829890-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit

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

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA029-A: pH Measurements (QCLot: 1981762)								
EA029: pH KCl (23A)	----	0.1	pH Unit	<0.1	4.6 pH Unit	104	70	130
EA029: pH OX (23B)	----	0.1	pH Unit	<0.1	4.3 pH Unit	109	70	130
EA029-A: pH Measurements (QCLot: 1981763)								
EA029: pH KCl (23A)	----	0.1	pH Unit	<0.1	4.6 pH Unit	104	70	130
EA029: pH OX (23B)	----	0.1	pH Unit	<0.1	4.3 pH Unit	112	70	130
EA029-B: Acidity Trail (QCLot: 1981762)								
EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	17.7 mole H+ / t	113	70	130
EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	35.2 mole H+ / t	90.9	70	130
EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	----	----	----	----
EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029-B: Acidity Trail (QCLot: 1981763)								
EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	17.7 mole H+ / t	117	70	130
EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	35.2 mole H+ / t	93.8	70	130
EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	----	----	----	----
EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029-C: Sulfur Trail (QCLot: 1981762)								
EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	0.052 % S	82.5	70	130
EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	0.158 % S	80.7	70	130
EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	----	----	----	----
EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	----	----	----	----
EA029-C: Sulfur Trail (QCLot: 1981763)								
EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	0.052 % S	75.9	70	130
EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	0.158 % S	86.1	70	130
EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	----	----	----	----
EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	----	----	----	----
EA029-D: Calcium Values (QCLot: 1981762)								
EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	<0.020	0.097 % Ca	112	70	130
EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	<0.020	0.22 % Ca	97.7	70	130
EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	----	----	----	----

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EA029-D: Calcium Values (QCLot: 1981762) - continued								
EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	----	----	----	----
EA029-D: Calcium Values (QCLot: 1981763)								
EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	<0.020	0.097 % Ca	114	70	130
EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	<0.020	0.22 % Ca	98.9	70	130
EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	----	----	----	----
EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	----	----	----	----
EA029-E: Magnesium Values (QCLot: 1981762)								
EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	0.25 % Mg	73.5	70	130
EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	0.234 % Mg	77.4	70	130
EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	----	----	----	----
EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	----	----	----	----
EA029-E: Magnesium Values (QCLot: 1981763)								
EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	0.25 % Mg	73.2	70	130
EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	0.234 % Mg	77.5	70	130
EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	----	----	----	----
EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	----	----	----	----
EA029-F: Excess Acid Neutralising Capacity (QCLot: 1981762)								
EA029: Excess Acid Neutralising Capacity (23Q)	----	0.02	% CaCO3	<0.020	----	----	----	----
EA029: acidity - Excess Acid Neutralising Capacity (a-23Q)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Excess Acid Neutralising Capacity (s-23Q)	----	0.02	% S	<0.020	----	----	----	----
EA029-H: Acid Base Accounting (QCLot: 1981762)								
EA029: ANC Fineness Factor	----	0.5	-	<0.5	----	----	----	----
EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate	----	1	kg CaCO3/t	<1	----	----	----	----
EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	----	----	----	----
EA029-H: Acid Base Accounting (QCLot: 1981763)								
EA029: ANC Fineness Factor	----	0.5	-	<0.5	----	----	----	----
EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate	----	1	kg CaCO3/t	<1	----	----	----	----

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EA029-H: Acid Base Accounting (QCLot: 1981763) - continued								
EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	----	----	----	----
EG005T: Total Metals by ICP-AES (QCLot: 1982016)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	106	86	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	106	83	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	109	76	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	109	86	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	105	80	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	113	87	123
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	113	80	122
EG005T: Total Metals by ICP-AES (QCLot: 1982017)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	101	86	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	102	83	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	105	76	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	103	86	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	109	80	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	108	87	123
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	110	80	122
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1982015)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	83.6	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1982018)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	77.5	70	105
EP035G: Total Phenol by Discrete Analyser (QCLot: 1976601)								
EP035G: Phenols (Total)	----	1	mg/kg	<1	5 mg/kg	67.8	60	102
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1975401)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	103	62	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 1975400)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.4	69	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	94.2	65	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	86.4	67	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	89.1	68	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	90.6	65	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	83.4	67	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	90.7	69	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	91.7	62	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	90.0	63	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	93.8	66	116

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 1975400) - continued								
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	88.5	64	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	92.0	66	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	87.3	67	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	105	67	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	95.4	69	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	93.5	69	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	101	56	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	100.0	62	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	89.9	66	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	97.7	64	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	84.7	54	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1975400)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	74.6	59	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	104	62	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	90.0	54	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	95.3	67	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	86.2	70	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	89.6	72	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	79.4	68	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	93.4	68	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	89.1	69	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	91.3	76	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	105	64	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	87.1	70	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	85.5	69	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	89.7	66	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	90.4	68	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	91.3	62	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	98.0	68	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	96.8	65	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	72.3	41	123
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1975831)								
EP074: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	105	71	121
EP074: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	109	65	131
EP074: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	109	72	114
EP074: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	108	70	116
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	93.3	67	113
EP074: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	106	75	115

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1975831) - continued								
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	108	65	117
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	108	66	122
EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	104	68	118
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	106	69	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	103	69	117
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	107	69	115
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	106	66	118
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	105	59	125
EP074B: Oxygenated Compounds (QCLot: 1975831)								
EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	10 mg/kg	102	30	156
EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	10 mg/kg	113	58	136
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	10 mg/kg	102	62	132
EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	10 mg/kg	97.6	54	136
EP074C: Sulfonated Compounds (QCLot: 1975831)								
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	105	54	126
EP074D: Fumigants (QCLot: 1975831)								
EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	113	60	126
EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	101	68	124
EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	101	51	119
EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	99.5	52	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	102	63	115
EP074E: Halogenated Aliphatic Compounds (QCLot: 1975831)								
EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	10 mg/kg	106	30	148
EP074: Chloromethane	74-87-3	5	mg/kg	<5	10 mg/kg	113	41	141
EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	10 mg/kg	107	43	147
EP074: Bromomethane	74-83-9	5	mg/kg	<5	10 mg/kg	97.0	47	141
EP074: Chloroethane	75-00-3	5	mg/kg	<5	10 mg/kg	109	49	143
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	10 mg/kg	107	49	135
EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	110	54	126
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	96.0	43	129
EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	112	64	120
EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	107	67	125
EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	104	69	121
EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	109	65	117
EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	107	65	123
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	108	59	125
EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	97.6	65	125
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	100	70	118

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 1975831) - continued								
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	102	68	118
EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	109	64	126
EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	100	68	122
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	109	67	143
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	99.4	62	122
EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	103	54	128
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	111	55	129
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	103	65	121
EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	106	61	125
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	98.9	20	134
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	82.2	53	129
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	108	50	128
EP074F: Halogenated Aromatic Compounds (QCLot: 1975831)								
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	108	68	116
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	107	70	114
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	114	68	122
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	112	67	123
EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	106	70	116
EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	111	67	117
EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	105	70	114
EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	110	48	122
EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	112	52	122
EP074G: Trihalomethanes (QCLot: 1975831)								
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	101	66	124
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	92.6	61	121
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	103	63	121
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	96.7	60	126
EP074H: Naphthalene (QCLot: 1975831)								
EP074: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	106	67	129
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1975399)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	97.1	77	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	96.9	72	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	100	73	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	98.4	72	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	104	75	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	107	77	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	106	73	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	110	74	128

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1975399) - continued								
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	90.7	69	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	97.7	75	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	86.8	68	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	99.5	74	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	93.9	70	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	75.7	61	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	77.4	62	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	72.6	63	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1975402)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	104	77	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	106	72	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	107	73	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	108	72	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	111	75	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	113	77	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	114	73	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	116	74	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	100	69	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	102	75	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	96.1	68	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	106	74	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	104	70	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	97.2	61	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	98.6	62	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	95.8	63	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1975410)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	110	77	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	113	72	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	114	73	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	114	72	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	119	75	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	121	77	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	122	73	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	125	74	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	106	69	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	109	75	127

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1975410) - continued								
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	98.6	68	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	108	74	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	110	70	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	77.0	61	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	79.6	62	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	69.7	63	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975398)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	109	75	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	111	77	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	113	71	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975403)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	105	75	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	110	77	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	110	71	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975411)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	111	75	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	112	77	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	112	71	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975823)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	74.2	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975829)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	113	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975830)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	112	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1982637)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	82.6	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975398)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	109	77	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	114	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	90.3	63	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975403)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	107	77	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	106	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	100	63	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975411)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	114	77	125

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975411) - continued								
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	108	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	93.5	63	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975823)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	76.3	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975829)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	107	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975830)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	120	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1982637)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	85.3	68	128
EP080: BTEXN (QCLot: 1975823)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	84.2	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	79.7	67	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	76.5	65	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	75.2	66	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	77.0	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	75.8	63	119
EP080: BTEXN (QCLot: 1975829)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	97.7	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	98.2	67	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	98.4	65	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	96.6	66	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	102	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	101	63	119
EP080: BTEXN (QCLot: 1975830)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	114	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	108	67	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	111	65	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	107	66	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	107	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	91.0	63	119
EP080: BTEXN (QCLot: 1982637)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	83.2	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	86.0	67	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	83.5	65	117

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP080: BTEXN (QCLot: 1982637) - continued								
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	86.0	66	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	88.6	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	83.0	63	119
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1975434)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00125 mg/kg	68.8	57	121
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	68.8	55	125
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	69.2	52	126
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	69.6	54	123
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	67.2	55	127
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	65.2	54	125
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1975434)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	61.7	52	128
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	72.4	54	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	70.0	58	127
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	70.0	57	128
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	72.4	60	134
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	70.8	63	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	68.8	55	130
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	70.4	62	130
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	68.8	53	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	60.4	49	129
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	69.2	59	129
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1975434)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	68.8	52	132
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	71.2	65	126
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	65.7	64	126
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	66.0	63	124
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	74.8	58	125
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	70.4	61	130
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	69.6	55	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1975434)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	80.8	54	130
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00125 mg/kg	74.4	61	130
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	82.0	62	130

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1975434) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00125 mg/kg	68.8	60	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 1978098)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.7	82	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	99.3	84	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	94.7	86	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	99.9	83	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	96.2	85	115
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	97.2	84	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	100	79	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1977233)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	92.0	77	111
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1975958)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	89.0	62	107
EP068A: Organochlorine Pesticides (OC) (QCLot: 1975957)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	89.7	65	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	103	58	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	89.4	69	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	91.0	70	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	85.4	69	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	87.3	65	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	86.4	66	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	88.1	67	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	88.1	64	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	93.9	67	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	87.6	63	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	88.6	65	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	94.0	66	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	85.4	65	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	91.6	67	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	92.6	72	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	77.2	67	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	104	65	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	90.4	65	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	102	64	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	92.8	61	114

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1975957)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	76.9	66	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	101	64	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	24.2	20	48
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	81.9	70	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	94.8	71	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	88.3	77	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	78.7	70	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	84.2	68	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	87.3	69	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	90.3	75	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	76.8	67	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	88.0	69	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	87.4	72	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	87.8	68	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	82.2	64	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	91.9	68	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	86.3	74	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	103	66	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	75.6	52	128
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1975922)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	105	77	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	101	69	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	99.6	76	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	94.1	77	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	88.8	73	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	100	79	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	94.1	76	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	97.6	69	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	95.8	74	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	99.2	73	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	92.5	74	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	96.7	72	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	83.9	71	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	100	65	123
EP074B: Oxygenated Compounds (QCLot: 1975922)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	82.6	61	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	95.1	74	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	88.8	66	132

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074B: Oxygenated Compounds (QCLot: 1975922) - continued								
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	89.1	65	137
EP074C: Sulfonated Compounds (QCLot: 1975922)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	88.0	73	127
EP074D: Fumigants (QCLot: 1975922)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	92.8	68	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	103	76	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	83.6	62	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	82.9	60	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	102	69	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 1975922)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	81.4	61	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	96.7	67	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	106	69	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	98.6	56	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	100.0	61	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	87.6	69	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	100	70	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	86.4	70	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	95.4	74	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	107	74	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	102	77	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	89.5	67	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	97.2	73	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	102	62	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	92.9	73	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	103	76	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	102	73	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	106	72	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	102	71	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	91.4	72	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	86.1	66	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	86.0	60	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	87.3	71	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	111	70	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	99.4	74	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	83.4	72	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	108	66	136
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	94.4	58	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074F: Halogenated Aromatic Compounds (QCLot: 1975922)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	101	79	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	98.5	76	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	102	73	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	98.4	73	119
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	98.6	75	117
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	103	74	118
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	103	75	117
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	92.8	61	125
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	110	67	123
EP074G: Trihalomethanes (QCLot: 1975922)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	101	72	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	86.9	64	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	104	65	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	103	74	126
EP074H: Naphthalene (QCLot: 1975922)								
EP074: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	97.9	72	122
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1975959)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	70.1	50	94
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	97.0	64	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	100.0	62	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	90.9	64	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	104	63	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	88.9	64	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	92.1	64	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	101	63	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	101	64	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	98.0	63	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	89.3	62	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	100	63	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	93.2	63	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	94.7	60	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	91.0	61	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	90.9	59	118
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975921)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	102	75	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975956)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	81.5	76	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975956) - continued								
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	103	83	109
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	105	75	113
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975921)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	101	75	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975956)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	2500 µg/L	106	76	114
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	3500 µg/L	96.1	81	111
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1500 µg/L	106	77	119
EP080: BTEXN (QCLot: 1975921)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	94.3	70	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	89.6	69	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	95.5	70	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	96.6	69	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	98.5	72	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	99.7	70	120

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005T: Total Metals by ICP-AES (QCLot: 1982016)							
ES1829955-001	SRT-BH420-0.5	EG005T: Arsenic	7440-38-2	50 mg/kg	91.3	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	102	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	112	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	118	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	82.0	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	111	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	# 144	70	130
EG005T: Total Metals by ICP-AES (QCLot: 1982017)							
ES1829955-044	SRT_BH416_1.5	EG005T: Arsenic	7440-38-2	50 mg/kg	108	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	106	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	109	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	106	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	106	70	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 1982017) - continued							
ES1829955-044	SRT_BH416_1.5	EG005T: Nickel	7440-02-0	50 mg/kg	106	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	110	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1982015)							
ES1829955-001	SRT-BH420-0.5	EG035T: Mercury	7439-97-6	5 mg/kg	78.9	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1982018)							
ES1829955-044	SRT_BH416_1.5	EG035T: Mercury	7439-97-6	5 mg/kg	97.9	70	130
EP035G: Total Phenol by Discrete Analyser (QCLot: 1976601)							
ES1829955-001	SRT-BH420-0.5	EP035G: Phenols (Total)	----	4.2 mg/kg	74.8	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1975401)							
ES1829955-001	SRT-BH420-0.5	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	104	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 1975400)							
ES1829955-001	SRT-BH420-0.5	EP068: gamma-BHC	58-89-9	0.5 mg/kg	98.8	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	77.1	70	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	79.6	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	74.8	70	130
		EP068: Endrin	72-20-8	2 mg/kg	91.9	70	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	93.6	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1975400)							
ES1829955-001	SRT-BH420-0.5	EP068: Diazinon	333-41-5	0.5 mg/kg	74.7	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	75.3	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	79.7	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	75.6	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	82.1	70	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1975831)							
ES1829955-011	SRT_BH408_0.5	EP074: Benzene	71-43-2	2.5 mg/kg	115	70	130
		EP074: Toluene	108-88-3	2.5 mg/kg	106	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 1975831)							
ES1829955-011	SRT_BH408_0.5	EP074: 1.1-Dichloroethene	75-35-4	2.5 mg/kg	119	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	105	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 1975831)							
ES1829955-011	SRT_BH408_0.5	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	105	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1975399)							
ES1829955-001	SRT-BH420-0.5	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	104	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	116	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1975402)							

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1975402) - continued							
ES1829955-002	SRT-BH420-1.0	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	104	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	116	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1975410)							
ES1829925-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	107	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	126	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975398)							
ES1829955-001	SRT-BH420-0.5	EP071: C10 - C14 Fraction	----	523 mg/kg	103	73	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	114	53	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	125	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975403)							
ES1829955-002	SRT-BH420-1.0	EP071: C10 - C14 Fraction	----	523 mg/kg	88.6	73	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	98.9	53	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	118	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975411)							
ES1829925-001	Anonymous	EP071: C10 - C14 Fraction	----	523 mg/kg	100	73	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	113	53	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	121	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975823)							
ES1829955-001	SRT-BH420-0.5	EP080: C6 - C9 Fraction	----	32.5 mg/kg	94.5	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975829)							
ES1829824-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	118	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975830)							
ES1829955-011	SRT_BH408_0.5	EP080: C6 - C9 Fraction	----	32.5 mg/kg	110	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1982637)							
ES1830060-024	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	90.9	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975398)							
ES1829955-001	SRT-BH420-0.5	EP071: >C10 - C16 Fraction	----	860 mg/kg	105	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	116	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	108	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975403)							
ES1829955-002	SRT-BH420-1.0	EP071: >C10 - C16 Fraction	----	860 mg/kg	95.4	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	116	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	112	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975411)							
ES1829925-001	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	106	73	137

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975411) - continued							
ES1829925-001	Anonymous	EP071: >C16 - C34 Fraction	----	3223 mg/kg	118	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	119	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975823)							
ES1829955-001	SRT-BH420-0.5	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	99.3	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975829)							
ES1829824-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	108	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975830)							
ES1829955-011	SRT_BH408_0.5	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	116	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1982637)							
ES1830060-024	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	90.6	70	130
EP080: BTEXN (QCLot: 1975823)							
ES1829955-001	SRT-BH420-0.5	EP080: Benzene	71-43-2	2.5 mg/kg	91.6	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	90.8	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	88.9	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	86.6	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	89.6	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	94.1	70	130
EP080: BTEXN (QCLot: 1975829)							
ES1829824-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	85.9	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	87.2	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	90.6	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	89.3	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	93.2	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	84.7	70	130
EP080: BTEXN (QCLot: 1975830)							
ES1829955-011	SRT_BH408_0.5	EP080: Benzene	71-43-2	2.5 mg/kg	110	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	104	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	109	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	106	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	104	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	98.2	70	130
EP080: BTEXN (QCLot: 1982637)							
ES1830060-024	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	84.8	70	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 1982637) - continued							
ES1830060-024	Anonymous	EP080: Toluene	108-88-3	2.5 mg/kg	86.4	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	89.7	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	88.0	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	88.2	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	78.2	70	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1975434)							
ES1829915-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00125 mg/kg	64.0	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00125 mg/kg	75.6	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00125 mg/kg	82.8	50	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00125 mg/kg	83.6	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00125 mg/kg	77.6	50	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.00125 mg/kg	78.4	50	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1975434)							
ES1829915-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	77.2	30	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	85.6	50	130
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	75.2	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	82.4	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	84.4	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	85.6	50	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	87.2	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	81.2	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	75.6	50	130
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	71.6	30	130
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	80.1	30	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1975434)							
ES1829915-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	82.0	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	79.6	30	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	83.2	30	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	74.7	30	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	70.2	30	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	88.4	30	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	76.8	30	130

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Recovery Limits (%): Low	Recovery Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1975434)							
ES1829915-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00125 mg/kg	110	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00125 mg/kg	112	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.00125 mg/kg	116	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00125 mg/kg	87.2	50	130

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 1978098)							
ES1829923-002	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	101	70	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	104	70	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	103	70	130
		EG020A-T: Copper	7440-50-8	1 mg/L	100	70	130
		EG020A-T: Lead	7439-92-1	1 mg/L	106	70	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	102	70	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	100	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1977233)							
ES1829930-001	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	86.0	70	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1975922)							
ES1829890-001	Anonymous	EP074: Benzene	71-43-2	25 µg/L	113	70	130
		EP074: Toluene	108-88-3	25 µg/L	109	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 1975922)							
ES1829890-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	106	70	130
		EP074: Trichloroethene	79-01-6	25 µg/L	101	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 1975922)							
ES1829890-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	106	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975921)							
ES1829890-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	102	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975921)							
ES1829890-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	106	70	130
EP080: BTEXN (QCLot: 1975921)							
ES1829890-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	112	70	130
		EP080: Toluene	108-88-3	25 µg/L	105	70	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	99.2	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	94.3	70	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	99.2	70	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080: BTEXN (QCLot: 1975921) - continued							
ES1829890-001	Anonymous	EP080: Naphthalene	91-20-3	25 µg/L	95.4	70	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES1829955**	Page	: 1 of 26
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Telephone	: +61-2-8784 8555
Project	: SYDNEY METRO	Date Samples Received	: 10-Oct-2018
Site	: Waterloo Station	Issue Date	: 17-Oct-2018
Sampler	: ----	No. of samples received	: 84
Order number	: .	No. of samples analysed	: 64

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

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

Outliers : Frequency of Quality Control Samples

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

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EG005T: Total Metals by ICP-AES	ES1829955--001	SRT-BH420-0.5	**Copper**	7440-50-8	48.2 %	0% - 20%	**RPD exceeds LOR based limits**
EG005T: Total Metals by ICP-AES	ES1829955--060	SRT_BH422_1.5	**Lead**	7439-92-1	100.0 %	0% - 50%	**RPD exceeds LOR based limits**
EG005T: Total Metals by ICP-AES	ES1829955--060	SRT_BH422_1.5	**Zinc**	7440-66-6	20.2 %	0% - 20%	**RPD exceeds LOR based limits**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	ES1829955--058	SRT_BH422_0.5	**Sum of polycyclic aromatic hydrocarbons**	----	47.1 %	0% - 20%	**RPD exceeds LOR based limits**
Matrix Spike (MS) Recoveries							
EG005T: Total Metals by ICP-AES	ES1829955--001	SRT-BH420-0.5	**Zinc**	7440-66-6	144 %	70-130%	**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							
EP075(SIM)S: Phenolic Compound Surrogates	ES1829955-036	SRT_BH412_0.5	**2-Chlorophenol-D4**	93951-73-6	63.0 %	66-122 %	**Recovery less than lower data quality objective**
EP075(SIM)S: Phenolic Compound Surrogates	ES1829955-036	SRT_BH412_0.5	**2.4.6-Tribromophenol**	118-79-6	27.0 %	40-138 %	**Recovery less than lower data quality objective**
EP075(SIM)S: Phenolic Compound Surrogates	ES1829955-075	QCA102	**2.4.6-Tribromophenol**	118-79-6	35.2 %	40-138 %	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / **Container** / Client Sample ID(s)	*Extraction / Preparation*			*Analysis*		
	Date extracted	*Due for extraction*	***Days overdue***	*Date analysed*	*Due for analysis*	***Days overdue***
EA029-A: pH Measurements						
Snap Lock Bag						
SRT-BH420-3.0	16-Oct-2018	07-Oct-2018	**9**	----	----	----
Snap Lock Bag - frozen on receipt						
SRT-BH420-4.0-4.45, SRT-BH420-5.5-5.95	16-Oct-2018	07-Oct-2018	**9**	----	----	----
EA029-B: Acidity Trail						
Snap Lock Bag						
SRT-BH420-3.0	16-Oct-2018	07-Oct-2018	**9**	----	----	----
Snap Lock Bag - frozen on receipt						
SRT-BH420-4.0-4.45, SRT-BH420-5.5-5.95	16-Oct-2018	07-Oct-2018	**9**	----	----	----
EA029-C: Sulfur Trail						
Snap Lock Bag						
SRT-BH420-3.0	16-Oct-2018	07-Oct-2018	**9**	----	----	----

Matrix: **SOIL**

Method / Container / Client Sample ID(s)		Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA029-C: Sulfur Trail - Analysis Holding Time Compliance							
Snap Lock Bag - frozen on receipt							
SRT-BH420-4.0-4.45,	SRT-BH420-5.5-5.95	16-Oct-2018	07-Oct-2018	9	----	----	----
EA029-D: Calcium Values							
Snap Lock Bag							
SRT-BH420-3.0		16-Oct-2018	07-Oct-2018	9	----	----	----
Snap Lock Bag - frozen on receipt							
SRT-BH420-4.0-4.45,	SRT-BH420-5.5-5.95	16-Oct-2018	07-Oct-2018	9	----	----	----
EA029-E: Magnesium Values							
Snap Lock Bag							
SRT-BH420-3.0		16-Oct-2018	07-Oct-2018	9	----	----	----
Snap Lock Bag - frozen on receipt							
SRT-BH420-4.0-4.45,	SRT-BH420-5.5-5.95	16-Oct-2018	07-Oct-2018	9	----	----	----
EA029-F: Excess Acid Neutralising Capacity							
Snap Lock Bag							
SRT-BH420-3.0		16-Oct-2018	07-Oct-2018	9	----	----	----
Snap Lock Bag - frozen on receipt							
SRT-BH420-4.0-4.45,	SRT-BH420-5.5-5.95	16-Oct-2018	07-Oct-2018	9	----	----	----
EA029-G: Retained Acidity							
Snap Lock Bag							
SRT-BH420-3.0		16-Oct-2018	07-Oct-2018	9	----	----	----
Snap Lock Bag - frozen on receipt							
SRT-BH420-4.0-4.45,	SRT-BH420-5.5-5.95	16-Oct-2018	07-Oct-2018	9	----	----	----
EA029-H: Acid Base Accounting							
Snap Lock Bag							
SRT-BH420-3.0		16-Oct-2018	07-Oct-2018	9	----	----	----
Snap Lock Bag - frozen on receipt							
SRT-BH420-4.0-4.45,	SRT-BH420-5.5-5.95	16-Oct-2018	07-Oct-2018	9	----	----	----

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Moisture Content	6	62	9.68	10.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP) - Continued					
Polychlorinated Biphenyls (PCB)	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	13	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	13	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*
EA029-A: pH Measurements								
Snap Lock Bag (EA029)								
SRT-BH420-3.0		**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt (EA029)								
SRT-BH420-4.0-4.45,	SRT-BH420-5.5-5.95	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)								
SRT_BH408_3.0,	SRT_BH409_3.0,	**06-Oct-2018**	**16-Oct-2018**	01-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
SRT_BH409_4.0,	SRT_BH410_3.0,							
SRT_BH411_3.0,	SRT_BH412_3.0,							
SRT_BH416_3.0,	SRT_BH421_3.0							
Snap Lock Bag - frozen on receipt at ALS (EA029)								
SRT_BH422_3.0,	SRT_BH426_4.0,	**07-Oct-2018**	**16-Oct-2018**	02-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
SRT_BH426_5.0								

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
EA029-B: Acidity Trail							
Snap Lock Bag (EA029)							
SRT-BH420-3.0	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt (EA029)							
SRT-BH420-4.0-4.45, SRT-BH420-5.5-5.95	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH408_3.0, SRT_BH409_3.0, SRT_BH409_4.0, SRT_BH410_3.0, SRT_BH411_3.0, SRT_BH412_3.0, SRT_BH416_3.0, SRT_BH421_3.0	**06-Oct-2018**	**16-Oct-2018**	01-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH422_3.0, SRT_BH426_4.0, SRT_BH426_5.0	**07-Oct-2018**	**16-Oct-2018**	02-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
EA029-C: Sulfur Trail							
Snap Lock Bag (EA029)							
SRT-BH420-3.0	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt (EA029)							
SRT-BH420-4.0-4.45, SRT-BH420-5.5-5.95	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH408_3.0, SRT_BH409_3.0, SRT_BH409_4.0, SRT_BH410_3.0, SRT_BH411_3.0, SRT_BH412_3.0, SRT_BH416_3.0, SRT_BH421_3.0	**06-Oct-2018**	**16-Oct-2018**	01-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH422_3.0, SRT_BH426_4.0, SRT_BH426_5.0	**07-Oct-2018**	**16-Oct-2018**	02-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
EA029-D: Calcium Values							
Snap Lock Bag (EA029)							
SRT-BH420-3.0	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt (EA029)							
SRT-BH420-4.0-4.45, SRT-BH420-5.5-5.95	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH408_3.0, SRT_BH409_3.0, SRT_BH409_4.0, SRT_BH410_3.0, SRT_BH411_3.0, SRT_BH412_3.0, SRT_BH416_3.0, SRT_BH421_3.0	**06-Oct-2018**	**16-Oct-2018**	01-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH422_3.0, SRT_BH426_4.0, SRT_BH426_5.0	**07-Oct-2018**	**16-Oct-2018**	02-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓

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
EA029-E: Magnesium Values							
Snap Lock Bag (EA029)							
SRT-BH420-3.0	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt (EA029)							
SRT-BH420-4.0-4.45, SRT-BH420-5.5-5.95	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH408_3.0, SRT_BH409_3.0, SRT_BH409_4.0, SRT_BH410_3.0, SRT_BH411_3.0, SRT_BH412_3.0, SRT_BH416_3.0, SRT_BH421_3.0	**06-Oct-2018**	**16-Oct-2018**	01-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH422_3.0, SRT_BH426_4.0, SRT_BH426_5.0	**07-Oct-2018**	**16-Oct-2018**	02-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
EA029-F: Excess Acid Neutralising Capacity							
Snap Lock Bag (EA029)							
SRT-BH420-3.0	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt (EA029)							
SRT-BH420-4.0-4.45, SRT-BH420-5.5-5.95	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH408_3.0, SRT_BH409_3.0, SRT_BH409_4.0, SRT_BH410_3.0, SRT_BH411_3.0, SRT_BH412_3.0, SRT_BH416_3.0, SRT_BH421_3.0	**06-Oct-2018**	**16-Oct-2018**	01-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH422_3.0, SRT_BH426_4.0, SRT_BH426_5.0	**07-Oct-2018**	**16-Oct-2018**	02-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
EA029-G: Retained Acidity							
Snap Lock Bag (EA029)							
SRT-BH420-3.0	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt (EA029)							
SRT-BH420-4.0-4.45, SRT-BH420-5.5-5.95	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH408_3.0, SRT_BH409_3.0, SRT_BH409_4.0, SRT_BH410_3.0, SRT_BH411_3.0, SRT_BH412_3.0, SRT_BH416_3.0, SRT_BH421_3.0	**06-Oct-2018**	**16-Oct-2018**	01-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH422_3.0, SRT_BH426_4.0, SRT_BH426_5.0	**07-Oct-2018**	**16-Oct-2018**	02-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓

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
EA029-H: Acid Base Accounting							
Snap Lock Bag (EA029)							
SRT-BH420-3.0	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt (EA029)							
SRT-BH420-4.0-4.45, SRT-BH420-5.5-5.95	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH408_3.0, SRT_BH409_3.0, SRT_BH409_4.0, SRT_BH410_3.0, SRT_BH411_3.0, SRT_BH412_3.0, SRT_BH416_3.0, SRT_BH421_3.0	**06-Oct-2018**	**16-Oct-2018**	01-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH422_3.0, SRT_BH426_4.0, SRT_BH426_5.0	**07-Oct-2018**	**16-Oct-2018**	02-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
SRT-BH420-0.5, SRT-BH420-1.0, SRT-BH420-2.0, SRT_BH408_0.2, SRT_BH408_0.5, SRT_BH408_1.5, SRT_BH408_2.0, SRT_BH408_3.0, SRT_BH409_0.5, SRT_BH409_1.5, SRT_BH409_2.0, SRT_BH409_3.0, SRT_BH410_0.2, SRT_BH410_0.8, SRT_BH410_1.5, SRT_BH411_0.5, QCA101, SRT_BH411_1.0, SRT_BH411_2.0, SRT_BH412_0.11, SRT_BH412_0.5, SRT_BH412_1.0, SRT_BH412_2.0, SRT_BH416_0.25, SRT_BH416_0.5, SRT_BH416_1.0, SRT_BH416_1.5, SRT_BH416_3.0, SRT_BH417_0.5, SRT_BH417_1.5, SRT_BH417_2.0, SRT_BH417_3.0, SRT_BH421_0.25, QCA102, SRT_BH421_0.5, SRT_BH421_1.0, SRT_BH421_3.0, QCA103	**06-Oct-2018**	**----**	----	----	**11-Oct-2018**	20-Oct-2018	✓
Soil Glass Jar - Unpreserved (EA055)							
SRT_BH422_0.5, SRT_BH422_1.0, SRT_BH422_1.5, SRT_BH426_0.1, SRT_BH426_0.5, SRT_BH426_1.0, SRT_BH426_2.0, SRT_BH426_4.0	**07-Oct-2018**	**----**	----	----	**11-Oct-2018**	21-Oct-2018	✓

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
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag (EA200)							
SRT-BH420-0.5	**06-Oct-2018**	**----**	----	----	**15-Oct-2018**	04-Apr-2019	✓
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200)							
SRT_BH416_0.25, SRT_BH416_1.0	**06-Oct-2018**	**----**	----	----	**15-Oct-2018**	04-Apr-2019	✓
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200)							
SRT_BH426_0.1	**07-Oct-2018**	**----**	----	----	**15-Oct-2018**	05-Apr-2019	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
SRT_BH408_0.2, SRT_BH409_0.5, SRT_BH410_0.2, SRT_BH411_0.15, SRT_BH412_0.5, SRT_BH412_1.0, SRT_BH417_0.5, SRT_BH421_0.25	**06-Oct-2018**	**----**	----	----	**15-Oct-2018**	04-Apr-2019	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
SRT_BH422_0.5	**07-Oct-2018**	**----**	----	----	**15-Oct-2018**	05-Apr-2019	✓
Snap Lock Bag - Subsampled by ALS (EA200)							
QCA101	**06-Oct-2018**	**----**	----	----	**15-Oct-2018**	04-Apr-2019	✓
EA200N: Asbestos Quantification (non-NATA)							
Snap Lock Bag (EA200N)							
SRT-BH420-0.5	**06-Oct-2018**	**----**	----	----	**15-Oct-2018**	04-Apr-2019	✓
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200N)							
SRT_BH416_0.25, SRT_BH416_1.0	**06-Oct-2018**	**----**	----	----	**15-Oct-2018**	04-Apr-2019	✓
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200N)							
SRT_BH426_0.1	**07-Oct-2018**	**----**	----	----	**15-Oct-2018**	05-Apr-2019	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200N)							
SRT_BH408_0.2, SRT_BH409_0.5, SRT_BH410_0.2, SRT_BH411_0.15, SRT_BH412_0.5, SRT_BH412_1.0, SRT_BH417_0.5, SRT_BH421_0.25	**06-Oct-2018**	**----**	----	----	**15-Oct-2018**	04-Apr-2019	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200N)							
SRT_BH422_0.5	**07-Oct-2018**	**----**	----	----	**15-Oct-2018**	05-Apr-2019	✓
Snap Lock Bag - Subsampled by ALS (EA200N)							
QCA101	**06-Oct-2018**	**----**	----	----	**15-Oct-2018**	04-Apr-2019	✓

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
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
SRT-BH420-0.5, SRT-BH420-1.0, SRT-BH420-2.0, SRT_BH408_0.2, SRT_BH408_0.5, SRT_BH408_2.0, SRT_BH409_0.5, SRT_BH409_1.5, SRT_BH409_3.0, SRT_BH410_0.2, SRT_BH410_0.8, SRT_BH410_1.5, SRT_BH411_0.5, SRT_BH411_1.0, SRT_BH411_2.0, SRT_BH412_0.5, QCA101, SRT_BH412_1.0, SRT_BH412_2.0, SRT_BH416_0.25, SRT_BH416_0.5, SRT_BH416_1.5, SRT_BH416_3.0, SRT_BH417_0.5, SRT_BH417_1.5, SRT_BH417_3.0, SRT_BH421_0.5, SRT_BH421_1.0, SRT_BH421_3.0, QCA102, QCA103	**06-Oct-2018**	**15-Oct-2018**	04-Apr-2019	✓	**15-Oct-2018**	04-Apr-2019	✓
Soil Glass Jar - Unpreserved (EG005T)							
SRT_BH422_0.5, SRT_BH422_1.0, SRT_BH422_1.5, SRT_BH426_0.1, SRT_BH426_1.0, SRT_BH426_2.0, SRT_BH426_4.0	**07-Oct-2018**	**15-Oct-2018**	05-Apr-2019	✓	**15-Oct-2018**	05-Apr-2019	✓

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
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
SRT-BH420-0.5, SRT-BH420-1.0, SRT-BH420-2.0, SRT_BH408_0.2, SRT_BH408_0.5, SRT_BH408_2.0, SRT_BH409_0.5, SRT_BH409_1.5, SRT_BH409_3.0, SRT_BH410_0.2, SRT_BH410_0.8, SRT_BH410_1.5, SRT_BH411_0.5, SRT_BH411_1.0, SRT_BH411_2.0, SRT_BH412_0.5, QCA101, SRT_BH412_1.0, SRT_BH412_2.0, SRT_BH416_0.25, SRT_BH416_0.5, SRT_BH416_1.5, SRT_BH416_3.0, SRT_BH417_0.5, SRT_BH417_1.5, SRT_BH417_3.0, SRT_BH421_0.5, SRT_BH421_1.0, SRT_BH421_3.0, QCA102, QCA103	**06-Oct-2018**	**15-Oct-2018**	03-Nov-2018	✓	**16-Oct-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EG035T)							
SRT_BH422_0.5, SRT_BH422_1.0, SRT_BH422_1.5, SRT_BH426_0.1, SRT_BH426_1.0, SRT_BH426_2.0, SRT_BH426_4.0	**07-Oct-2018**	**15-Oct-2018**	04-Nov-2018	✓	**16-Oct-2018**	04-Nov-2018	✓
EP035G: Total Phenol by Discrete Analyser							
Soil Glass Jar - Unpreserved (EP035G)							
SRT-BH420-0.5, SRT_BH408_0.5, SRT_BH409_0.5, SRT_BH410_0.8, SRT_BH411_0.5, SRT_BH412_0.11, SRT_BH412_1.0, SRT_BH416_0.5, SRT_BH417_0.5, SRT_BH417_1.5, QCA101	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP035G)							
SRT_BH422_0.5, SRT_BH426_0.5, SRT_BH426_1.0	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓

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
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066)								
SRT-BH420-0.5,	SRT_BH408_0.5,	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
SRT_BH409_0.5,	SRT_BH410_0.8,							
SRT_BH411_0.5,	SRT_BH412_0.11,							
SRT_BH412_1.0,	SRT_BH416_0.5,							
SRT_BH417_0.5,	SRT_BH417_1.5,							
QCA101								
Soil Glass Jar - Unpreserved (EP066)								
SRT_BH422_0.5,	SRT_BH426_0.5,	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
SRT_BH426_1.0								
EP068A: Organochlorine Pesticides (OC)								
Soil Glass Jar - Unpreserved (EP068)								
SRT-BH420-0.5,	SRT_BH408_0.5,	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
SRT_BH409_0.5,	SRT_BH410_0.8,							
SRT_BH411_0.5,	SRT_BH412_0.11,							
SRT_BH412_1.0,	SRT_BH416_0.5,							
SRT_BH417_0.5,	SRT_BH421_0.25,							
QCA101								
Soil Glass Jar - Unpreserved (EP068)								
SRT_BH422_0.5,	SRT_BH426_0.5	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
EP068B: Organophosphorus Pesticides (OP)								
Soil Glass Jar - Unpreserved (EP068)								
SRT-BH420-0.5,	SRT_BH408_0.5,	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
SRT_BH409_0.5,	SRT_BH410_0.8,							
SRT_BH411_0.5,	SRT_BH412_0.11,							
SRT_BH412_1.0,	SRT_BH416_0.5,							
SRT_BH417_0.5,	SRT_BH421_0.25,							
QCA101								
Soil Glass Jar - Unpreserved (EP068)								
SRT_BH422_0.5,	SRT_BH426_0.5	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
EP074A: Monocyclic Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH408_0.5,	SRT_BH408_1.5,	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	13-Oct-2018	✓
SRT_BH408_3.0,	SRT_BH409_0.5,							
SRT_BH409_2.0,	SRT_BH410_1.5,							
SRT_BH416_0.25,	SRT_BH416_1.0,							
SRT_BH416_3.0,	SRT_BH417_0.5,							
SRT_BH417_2.0,	SRT_BH417_3.0,							
QCA101								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH426_0.1,	SRT_BH426_1.0	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	14-Oct-2018	✓

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
EP074B: Oxygenated Compounds								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH408_0.5,	SRT_BH408_1.5,	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	13-Oct-2018	✓
SRT_BH408_3.0,	SRT_BH409_0.5,							
SRT_BH409_2.0,	SRT_BH410_1.5,							
SRT_BH416_0.25,	SRT_BH416_1.0,							
SRT_BH416_3.0,	SRT_BH417_0.5,							
SRT_BH417_2.0,	SRT_BH417_3.0,							
QCA101								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH426_0.1,	SRT_BH426_1.0	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	14-Oct-2018	✓
EP074C: Sulfonated Compounds								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH408_0.5,	SRT_BH408_1.5,	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	13-Oct-2018	✓
SRT_BH408_3.0,	SRT_BH409_0.5,							
SRT_BH409_2.0,	SRT_BH410_1.5,							
SRT_BH416_0.25,	SRT_BH416_1.0,							
SRT_BH416_3.0,	SRT_BH417_0.5,							
SRT_BH417_2.0,	SRT_BH417_3.0,							
QCA101								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH426_0.1,	SRT_BH426_1.0	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	14-Oct-2018	✓
EP074D: Fumigants								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH408_0.5,	SRT_BH408_1.5,	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	13-Oct-2018	✓
SRT_BH408_3.0,	SRT_BH409_0.5,							
SRT_BH409_2.0,	SRT_BH410_1.5,							
SRT_BH416_0.25,	SRT_BH416_1.0,							
SRT_BH416_3.0,	SRT_BH417_0.5,							
SRT_BH417_2.0,	SRT_BH417_3.0,							
QCA101								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH426_0.1,	SRT_BH426_1.0	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	14-Oct-2018	✓

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
EP074E: Halogenated Aliphatic Compounds								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH408_0.5,	SRT_BH408_1.5,	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	13-Oct-2018	✓
SRT_BH408_3.0,	SRT_BH409_0.5,							
SRT_BH409_2.0,	SRT_BH410_1.5,							
SRT_BH416_0.25,	SRT_BH416_1.0,							
SRT_BH416_3.0,	SRT_BH417_0.5,							
SRT_BH417_2.0,	SRT_BH417_3.0,							
QCA101								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH426_0.1,	SRT_BH426_1.0	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	14-Oct-2018	✓
EP074F: Halogenated Aromatic Compounds								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH408_0.5,	SRT_BH408_1.5,	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	13-Oct-2018	✓
SRT_BH408_3.0,	SRT_BH409_0.5,							
SRT_BH409_2.0,	SRT_BH410_1.5,							
SRT_BH416_0.25,	SRT_BH416_1.0,							
SRT_BH416_3.0,	SRT_BH417_0.5,							
SRT_BH417_2.0,	SRT_BH417_3.0,							
QCA101								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH426_0.1,	SRT_BH426_1.0	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	14-Oct-2018	✓
EP074G: Trihalomethanes								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH408_0.5,	SRT_BH408_1.5,	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	13-Oct-2018	✓
SRT_BH408_3.0,	SRT_BH409_0.5,							
SRT_BH409_2.0,	SRT_BH410_1.5,							
SRT_BH416_0.25,	SRT_BH416_1.0,							
SRT_BH416_3.0,	SRT_BH417_0.5,							
SRT_BH417_2.0,	SRT_BH417_3.0,							
QCA101								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH426_0.1,	SRT_BH426_1.0	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	14-Oct-2018	✓

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
EP074H: Naphthalene								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH408_0.5,	SRT_BH408_1.5,	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	13-Oct-2018	✓
SRT_BH408_3.0,	SRT_BH409_0.5,							
SRT_BH409_2.0,	SRT_BH410_1.5,							
SRT_BH416_0.25,	SRT_BH416_1.0,							
SRT_BH416_3.0,	SRT_BH417_0.5,							
SRT_BH417_2.0,	SRT_BH417_3.0,							
QCA101								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH426_0.1,	SRT_BH426_1.0	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	14-Oct-2018	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM))								
SRT-BH420-0.5,	SRT_BH408_0.5,	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Nov-2018	✓
SRT_BH409_0.5,	SRT_BH410_0.8,							
SRT_BH411_0.5,	SRT_BH412_1.0,							
SRT_BH416_0.5,	SRT_BH417_0.5,							
SRT_BH417_1.5,	QCA101,							
QCA102,	QCA103							
Soil Glass Jar - Unpreserved (EP075(SIM))								
SRT-BH420-1.0,	SRT-BH420-2.0,	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
SRT_BH408_0.2,	SRT_BH408_2.0,							
SRT_BH409_1.5,	SRT_BH409_3.0,							
SRT_BH410_0.2,	SRT_BH410_1.5,							
SRT_BH411_1.0,	SRT_BH411_2.0,							
SRT_BH412_0.5,	SRT_BH412_2.0,							
SRT_BH416_0.25,	SRT_BH416_1.5,							
SRT_BH416_3.0,	SRT_BH417_3.0,							
SRT_BH421_0.5,	SRT_BH421_1.0,							
SRT_BH421_3.0								
Soil Glass Jar - Unpreserved (EP075(SIM))								
SRT_BH422_0.5,	SRT_BH426_0.1,	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	20-Nov-2018	✓
SRT_BH426_1.0,	SRT_BH426_2.0,							
SRT_BH426_4.0								
Soil Glass Jar - Unpreserved (EP075(SIM))								
SRT_BH422_1.0,	SRT_BH422_1.5	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓

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
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) Trip Spike 8, Trip Spike TS100, Trip Control Spike	**02-Oct-2018**	**11-Oct-2018**	16-Oct-2018	✓	**12-Oct-2018**	16-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080) TSC 8	**02-Oct-2018**	**15-Oct-2018**	16-Oct-2018	✓	**15-Oct-2018**	16-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080) Trip Blank, Trip Blank TB100	**05-Oct-2018**	**11-Oct-2018**	19-Oct-2018	✓	**12-Oct-2018**	19-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080) SRT-BH420-0.5, SRT-BH420-1.0, SRT-BH420-2.0, SRT_BH408_0.2, SRT_BH408_0.5, SRT_BH408_2.0, SRT_BH409_0.5, SRT_BH409_1.5, SRT_BH409_3.0, SRT_BH410_0.2, SRT_BH410_0.8, SRT_BH410_1.5, SRT_BH411_0.5, SRT_BH411_1.0, SRT_BH411_2.0, SRT_BH412_0.5, QCA101, SRT_BH412_1.0, SRT_BH412_2.0, SRT_BH416_0.25, SRT_BH416_0.5, SRT_BH416_1.5, SRT_BH416_3.0, SRT_BH417_0.5, SRT_BH417_1.5, SRT_BH417_3.0, SRT_BH421_0.5, SRT_BH421_1.0, SRT_BH421_3.0, QCA102, QCA103	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**12-Oct-2018**	20-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP071) SRT-BH420-1.0, SRT-BH420-2.0, SRT_BH408_0.2, SRT_BH408_2.0, SRT_BH409_1.5, SRT_BH409_3.0, SRT_BH410_0.2, SRT_BH410_1.5, SRT_BH411_1.0, SRT_BH411_2.0, SRT_BH412_0.5, SRT_BH412_2.0, SRT_BH416_0.25, SRT_BH416_1.5, SRT_BH416_3.0, SRT_BH417_3.0, SRT_BH421_0.5, SRT_BH421_1.0, SRT_BH421_3.0	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**15-Oct-2018**	20-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP080) SRT_BH422_0.5, SRT_BH422_1.0, SRT_BH422_1.5, SRT_BH426_0.1, SRT_BH426_1.0, SRT_BH426_2.0, SRT_BH426_4.0	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**12-Oct-2018**	21-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP071) SRT_BH422_1.0, SRT_BH422_1.5	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**15-Oct-2018**	20-Nov-2018	✓

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
Trip Spike 8, Trip Spike TS100, Trip Control Spike	**02-Oct-2018**	**11-Oct-2018**	16-Oct-2018	✓	**12-Oct-2018**	16-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080)							
TSC 8	**02-Oct-2018**	**15-Oct-2018**	16-Oct-2018	✓	**15-Oct-2018**	16-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080)							
Trip Blank, Trip Blank TB100	**05-Oct-2018**	**11-Oct-2018**	19-Oct-2018	✓	**12-Oct-2018**	19-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080)							
SRT-BH420-0.5, SRT-BH420-1.0, SRT-BH420-2.0, SRT_BH408_0.2, SRT_BH408_0.5, SRT_BH408_2.0, SRT_BH409_0.5, SRT_BH409_1.5, SRT_BH409_3.0, SRT_BH410_0.2, SRT_BH410_0.8, SRT_BH410_1.5, SRT_BH411_0.5, SRT_BH411_1.0, SRT_BH411_2.0, SRT_BH412_0.5, QCA101, SRT_BH412_1.0, SRT_BH412_2.0, SRT_BH416_0.25, SRT_BH416_0.5, SRT_BH416_1.5, SRT_BH416_3.0, SRT_BH417_0.5, SRT_BH417_1.5, SRT_BH417_3.0, SRT_BH421_0.5, SRT_BH421_1.0, SRT_BH421_3.0, QCA102, QCA103	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**12-Oct-2018**	20-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP071)							
SRT-BH420-1.0, SRT-BH420-2.0, SRT_BH408_0.2, SRT_BH408_2.0, SRT_BH409_1.5, SRT_BH409_3.0, SRT_BH410_0.2, SRT_BH410_1.5, SRT_BH411_1.0, SRT_BH411_2.0, SRT_BH412_0.5, SRT_BH412_2.0, SRT_BH416_0.25, SRT_BH416_1.5, SRT_BH416_3.0, SRT_BH417_3.0, SRT_BH421_0.5, SRT_BH421_1.0, SRT_BH421_3.0	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**15-Oct-2018**	20-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP080)							
SRT_BH422_0.5, SRT_BH422_1.0, SRT_BH422_1.5, SRT_BH426_0.1, SRT_BH426_1.0, SRT_BH426_2.0, SRT_BH426_4.0	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**12-Oct-2018**	21-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP071)							
SRT_BH422_1.0, SRT_BH422_1.5	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**15-Oct-2018**	20-Nov-2018	✓

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
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) Trip Spike 8, Trip Spike TS100, Trip Control Spike	**02-Oct-2018**	**11-Oct-2018**	16-Oct-2018	✓	**12-Oct-2018**	16-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080) TSC 8	**02-Oct-2018**	**15-Oct-2018**	16-Oct-2018	✓	**15-Oct-2018**	16-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080) Trip Blank, Trip Blank TB100	**05-Oct-2018**	**11-Oct-2018**	19-Oct-2018	✓	**12-Oct-2018**	19-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080) SRT-BH420-0.5, SRT-BH420-1.0, SRT-BH420-2.0, SRT_BH408_0.2, SRT_BH408_0.5, SRT_BH408_2.0, SRT_BH409_0.5, SRT_BH409_1.5, SRT_BH409_3.0, SRT_BH410_0.2, SRT_BH410_0.8, SRT_BH410_1.5, SRT_BH411_0.5, SRT_BH411_1.0, SRT_BH411_2.0, SRT_BH412_0.5, QCA101, SRT_BH412_1.0, SRT_BH412_2.0, SRT_BH416_0.25, SRT_BH416_0.5, SRT_BH416_1.5, SRT_BH416_3.0, SRT_BH417_0.5, SRT_BH417_1.5, SRT_BH417_3.0, SRT_BH421_0.5, SRT_BH421_1.0, SRT_BH421_3.0, QCA102, QCA103	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**12-Oct-2018**	20-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080) SRT_BH422_0.5, SRT_BH422_1.0, SRT_BH422_1.5, SRT_BH426_0.1, SRT_BH426_1.0, SRT_BH426_2.0, SRT_BH426_4.0	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**12-Oct-2018**	21-Oct-2018	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
Soil Glass Jar - Unpreserved (EP231X) SRT_BH421_3.0	**06-Oct-2018**	**12-Oct-2018**	04-Apr-2019	✓	**12-Oct-2018**	21-Nov-2018	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
Soil Glass Jar - Unpreserved (EP231X) SRT_BH421_3.0	**06-Oct-2018**	**12-Oct-2018**	04-Apr-2019	✓	**12-Oct-2018**	21-Nov-2018	✓
EP231C: Perfluoroalkyl Sulfonamides							
Soil Glass Jar - Unpreserved (EP231X) SRT_BH421_3.0	**06-Oct-2018**	**12-Oct-2018**	04-Apr-2019	✓	**12-Oct-2018**	21-Nov-2018	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
Soil Glass Jar - Unpreserved (EP231X) SRT_BH421_3.0	**06-Oct-2018**	**12-Oct-2018**	04-Apr-2019	✓	**12-Oct-2018**	21-Nov-2018	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
Soil Glass Jar - Unpreserved (EP231X)							
SRT_BH421_3.0	**06-Oct-2018**	**12-Oct-2018**	04-Apr-2019	✓	**12-Oct-2018**	21-Nov-2018	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
RB100	**06-Oct-2018**	**12-Oct-2018**	04-Apr-2019	✓	**12-Oct-2018**	04-Apr-2019	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
RB103	**07-Oct-2018**	**12-Oct-2018**	05-Apr-2019	✓	**12-Oct-2018**	05-Apr-2019	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
RB100	**06-Oct-2018**	**----**	----	----	**12-Oct-2018**	03-Nov-2018	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
RB103	**07-Oct-2018**	**----**	----	----	**12-Oct-2018**	04-Nov-2018	✓
EP066: Polychlorinated Biphenyls (PCB)							
Amber Glass Bottle - Unpreserved (EP066)							
RB100	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
Amber Glass Bottle - Unpreserved (EP066)							
RB103	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068)							
RB100	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
Amber Glass Bottle - Unpreserved (EP068)							
RB103	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068)							
RB100	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
Amber Glass Bottle - Unpreserved (EP068)							
RB103	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074)							
RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓
EP074B: Oxygenated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP074) RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074) RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP074) RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP074) RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP074) RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP074) RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓
EP074H: Naphthalene							
Amber VOC Vial - Sulfuric Acid (EP074) RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP074) RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) RB100	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) RB103	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) RB100	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
Amber Glass Bottle - Unpreserved (EP071) RB103	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) RB100	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
Amber Glass Bottle - Unpreserved (EP071) RB103	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓

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	6	62	**9.68**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	6	55	**10.91**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	3	28	**10.71**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	38	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	5	38	**13.16**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	6	55	**10.91**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	8	68	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	3	55	**5.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	2	28	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	55	**5.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	68	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	3	55	**5.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	2	28	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	1	15	**6.67**	**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		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
TRH - Semivolatile Fraction	EP071	3	55	**5.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	68	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	3	55	**5.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	55	**5.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	68	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	2	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	2	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	2	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	13	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	2	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	2	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	2	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	13	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	SOIL	In house: Referenced to Ahern et al 2004 - a suspension peroxide oxidation method following the 'sulfur trail' by determining the level of 1M KCL extractable sulfur and the sulfur level after oxidation of soil sulphides. The 'acidity trail' is followed by measurement of TAA, TPA and TSA. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5.
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Asbestos Identification in Soils	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Asbestos Classification and Quantitation per NEPM 2013	* EA200N	SOIL	Asbestos Classification and Quantitation per NEPM 2013 with Confirmation of Identification by AS 4964 - 2004 Gravimetric determination of Asbestos Containing Material, Fibrous Asbestos, Asbestos Fines and sample weight and calculation of percentage concentrations per NEPM protocols. Asbestos (Fines and Fibrous FA+AF) is reported as the equivalent weight in the sample received after accounting for sub-sampling (where applicable for the <7mm and/or <2mm fractions).
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, 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 (2013) Schedule B(3)
Total Phenol By Discrete Analyser	EP035G	SOIL	In house: Referenced to APHA 5530 B&D Steam distillable Phenols are reacted with 4-aminoantipyrine. The resultant colour intensity is measured by Seal
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270D 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 (2013) Schedule B(3) (Method 504)
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270D 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 (2013) Schedule B(3) (Method 504,505)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM amended 2013.
Volatile Organic Compounds	EP074	SOIL	In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 501)

Analytical Methods	Method	Matrix	Method Descriptions
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D. 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 (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM amended 2013.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-House. A portion of soil is extracted with MTBE. The extract is taken to dryness, made up in mobile phase. Analysis is by LC/MSMS, ESI 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. This method complies with the quality control definitions as stated in QSM 5.1. Data is reviewed in line with the DQOs as stated in QSM5.1
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The 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 (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample 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 (2013) Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample 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 (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A 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 the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Drying at 85 degrees, bagging and labelling (ASS)	EN020PR	SOIL	In house
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 (2013) Schedule B(3) (Method 202)
Phenols After Microdistillation	EP035D	SOIL	In house: Referenced to APHA 5530 A, B&D. pH adjusted Steam distillable Phenolic compounds. The resultant colour intensity is measured by Discrete Analyser.
Sample Extraction for PFAS	EP231-PR	SOIL	In house
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.
Digestion for Total Recoverable Metals	EN25	WATER	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 (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

CHAIN OF CUSTODY & ANALYSIS REQUEST

Page _1_ of __2__

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: 1791865 – SM TSE

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway St Leonards NSW	Purchase Order No:	
		Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

Additional Report Formats
- ☐ NEPM
- ☐ CSV
- ☐ ESDAT
- ☐ DQO
- ☐ GO, Guidelines ---------
- ☐ Others _____

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other____	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)		EA200N (asbestos NEPM)	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)	Notes/Guidelines/LOR/ Special instructions
1	SRT-BH414_0.15	13/10/2018	x			3	x													
2	SRT-BH414_0.4	13/10/2018	x			2			X	X	X	X	X		X					
3	SRT-BH419_0.25	13/10/2018	x			1		x	X	X		X			X					
4	SRT-BH419_0.5	13/10/2018	x			3	x	x								X				
5	SRT-BH419_1.0	13/10/2018	x			3			X	X	X	X	X		X					
6	SRT-BH423_0.5	13/10/2018	x			2			X	X	X	X	X		X					
7	SRT-BH423_1.0	13/10/2018	x			2														
8	SRT-BH423_1.5	13/10/2018	x			1	x													
9	SRT-BH423_2.0	13/10/2018	x			2		X	X							X				
10	SRT_BH423_3.0	13/10/2018	x			2	x										X			
11	SRT_BH423_4.15	13/10/2018	x			2			X		X						X			
12	SRT_BH423_7.0	13/10/2018	x			2	x													
13	SRT_BH425_0.15	13/10/2018	x			2			X						X					

Lab / Analysis: Clay Content + Asbestos
Organised By / Date: Newcastle
Relinquished By / Date: SPOCAS
Connote / Courier: Brisbane
WO No:
Attach By PO / Internal Sheet:

Relinquished By: Barry Houston	Date/Time: 16/10/2018	Received By: [signature]	Date/Time: 16/10/18
Relinquished By:	Date/Time:	Received By:	Date/Time: 1659
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No* 28	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (16/10/2018)

Environmental Division
Sydney
Work Order Reference
ES1830703

Telephone : +61-2-8784 8555

Uncontrolled template when printed

Ref: PF-AU-ENV-BNE-QU100/Ver3/16.10.

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: 1791865 – SM TSE

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

Additional Report Formats

- ☐ NEPM
- ☐ CSV
- ☐ ESDAT
- ☐ DQO
- ☐ GO, Guidelines ------
- ☐ Others _____

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)		EA200N (asbestos NEPM)	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	(TRH / BTEXN / PAH / 8 Metals, OCPs/OPPs/PCBs)	Notes/Guidelines/LOR/ Special instructions
14	SRT_QCA104	13/10/2018	x			2		x	X		X									
15	Trip Blank 104		x			1												X		
16	Trip spike 104		x			1												X		
17	RB103	13/10/2018		X		4													X	
18	RB104	14/10/2018		X		4													X	
19	Trip spike Control																			
	SRT-BH423 SPT 8.5-8.95																			
	14/10/18 Waterloo																			

Relinquished By: Barry Houston	Date/Time: 16/10/2018	Received By: [signature] ALS	Date/Time: 16/10/18
Relinquished By:	Date/Time:	Received By:	Date/Time: 1659
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: Yes / No 2-8C	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (16/10/2018)

Helen Simpson

From: Bonetti, Rita <RBonetti@golder.com.au>
Sent: Wednesday, 17 October 2018 2:21 PM
To: Helen Simpson; Houston, Barry
Subject: RE: ALS Workorder ES1830703, Client GOLASS, Project Sydney Metro

Hi Helen,

Just looking at the COC and wanted to clarify the following:

- sample RB103 collected on 13/10/18 should be sample RB104 (i.e. the COC is incorrect and the ID on the bottles should be used)
- sample RB104 collected on 14/10/18 should be RB105 (i.e. the COC is incorrect and the ID on the bottles should be used)

Give me a call if you need to clarify.

Cheers,
Rita

Rita Bonetti (BEnvSC (Adv))
Environmental Scientist

GOLDER
Golder Associates Pty Ltd
124 Pacific Highway, St. Leonards, New South Wales 2065, Australia (PO Box 1302, Crows Nest NSW 1585)
T: +61 2 9478 3900 | **D:** +61 (2) 9478 3906 | **M:** +61 437 039 929 | **golder.com**
LinkedIn | Facebook | Twitter

From: Helen Simpson <helen.simpson@alsglobal.com>
Sent: Wednesday, 17 October 2018 12:38 PM
To: Bonetti, Rita <RBonetti@golder.com.au>; Houston, Barry <bhouston@golder.com.au>
Subject: ALS Workorder ES1830703, Client GOLASS, Project Sydney Metro

Hi,

Please note that we did not receive an Asbestos bag for sample BH419_0.25 and are unable to do NEPM Asbestos (quantification).

Sample RB104 listed on the COC was received labelled as RB105 on the bottles. Analysis has been added.

An extra sample was received and placed on hold. ID is SRT-BH423 SPT 8.5-8.95 14/10/18 Waterloo

Kind regards,

Helen Simpson
Sample Admin, Environmental

Sydney

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helen.simpson@alsglobal.com

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Smithfield, NSW, 2164

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SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES1830703**

Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: RBonetti@golder.com.au	E-mail	: ALSEnviro.Sydney@alsglobal.com
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9478 3901	Facsimile	: +61-2-8784 8500
Project	: Sydney Metro	Page	: 1 of 3
Order number	:	Quote number	: ES2017GOLASS0019 (SY/698/17 C V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: 1791865 - SM TSE		
Sampler	:		

Dates

Date Samples Received	: 16-Oct-2018 16:59	Issue Date	: 17-Oct-2018
Client Requested Due Date	: 23-Oct-2018	Scheduled Reporting Date	: **23-Oct-2018**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 2	Temperature	: 2.8 - Ice present
Receipt Detail	:	No. of samples received / analysed	: 20 / 15

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
- **Extra sample SRT-BH423 SPT 8.5-8.95 14/10/18 Waterloo received by ALS, this sample has been placed on hold.**
- **Sample RB104 was received as RB105.**
- **EA200N (asbestos NEPM) has not been added for sample SRT-BH419_0.25 as there is not enough volume/ no seperate snap lock bag received.**
- **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 absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.

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	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EA200N Asbestos in Soils - (<1kg samples ONLY)	SOIL - EP035G (solids) Total Phenol by Discrete Analyser	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - S-12 OC/OP Pesticides	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES1830703-001	13-Oct-2018 00:00	SRT-BH414_0.15	✓						
ES1830703-002	13-Oct-2018 00:00	SRT-BH414_0.4		✓	✓	✓	✓	✓	✓
ES1830703-003	13-Oct-2018 00:00	SRT-BH419_0.25		✓			✓	✓	✓
ES1830703-005	13-Oct-2018 00:00	SRT-BH419_1.0		✓	✓	✓	✓	✓	✓
ES1830703-006	13-Oct-2018 00:00	SRT-BH423_0.5		✓	✓	✓	✓	✓	✓
ES1830703-007	13-Oct-2018 00:00	SRT-BH423_1.0	✓						
ES1830703-008	13-Oct-2018 00:00	SRT-BH423_1.5	✓						
ES1830703-009	13-Oct-2018 00:00	SRT-BH423_2.0		✓					✓
ES1830703-011	13-Oct-2018 00:00	SRT_BH423_4.15		✓					✓
ES1830703-012	13-Oct-2018 00:00	SRT_BH423_7.0	✓						
ES1830703-013	13-Oct-2018 00:00	SRT_BH425_0.15		✓	✓				✓
ES1830703-014	13-Oct-2018 00:00	SRT_QCA104		✓					✓
ES1830703-020	14-Oct-2018 00:00	SRT-BH423 SPT 8.5-8....	✓						

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA002 pH (1:5)	SOIL - EA029 SPOCAS	SOIL - EA150H-C Clay Content by Hydrometer	SOIL - ED008 Def Exchangeable Cations with pre-treatment -	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - S-18 TRH(C6-C9)/BTEXN
ES1830703-002	13-Oct-2018 00:00	SRT-BH414_0.4					✓	
ES1830703-004	13-Oct-2018 00:00	SRT-BH419_0.5	✓		✓	✓		
ES1830703-005	13-Oct-2018 00:00	SRT-BH419_1.0					✓	
ES1830703-006	13-Oct-2018 00:00	SRT-BH423_0.5					✓	
ES1830703-009	13-Oct-2018 00:00	SRT-BH423_2.0	✓		✓	✓		
ES1830703-010	13-Oct-2018 00:00	SRT_BH423_3.0		✓				
ES1830703-011	13-Oct-2018 00:00	SRT_BH423_4.15		✓			✓	
ES1830703-014	13-Oct-2018 00:00	SRT_QCA104					✓	
ES1830703-015	12-Oct-2018 00:00	Trip Blank 104						✓
ES1830703-016	08-Oct-2018 00:00	Trip spike 104						✓
ES1830703-019	08-Oct-2018 00:00	Trip Spike Control						✓

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - W-16T TRH/BTEXN/PAH/OC/OP/PCB/8 Total metals
ES1830703-017	13-Oct-2018 00:00	RB103	✓
ES1830703-018	14-Oct-2018 00:00	RB104 RB105	✓

Proactive Holding Time Report

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

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	au_accountspayable@golder.com.au

BARRY HOUSTON

- *AU Certificate of Analysis - NATA (COA)	Email	bhouston@golder.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	bhouston@golder.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	bhouston@golder.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	bhouston@golder.com.au
- Attachment - Report (SUBCO)	Email	bhouston@golder.com.au
- Chain of Custody (CoC) (COC)	Email	bhouston@golder.com.au
- EDI Format - ENMRG (ENMRG)	Email	bhouston@golder.com.au
- EDI Format - ESDAT (ESDAT)	Email	bhouston@golder.com.au

RITA BONETTI

- *AU Certificate of Analysis - NATA (COA)	Email	RBonetti@golder.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	RBonetti@golder.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	RBonetti@golder.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	RBonetti@golder.com.au
- Attachment - Report (SUBCO)	Email	RBonetti@golder.com.au
- Chain of Custody (CoC) (COC)	Email	RBonetti@golder.com.au
- EDI Format - ENMRG (ENMRG)	Email	RBonetti@golder.com.au
- EDI Format - ESDAT (ESDAT)	Email	RBonetti@golder.com.au

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1830703**	Page	: 1 of 24
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 16-Oct-2018 16:59
Order number	: .	Date Analysis Commenced	: 17-Oct-2018
C-O-C number	: ----	Issue Date	: 24-Oct-2018 18:03
Sampler	: ----		
Site	: 1791865 - SM TSE		
Quote number	: SY/698/17 C V4		
No. of samples received	: 20		
No. of samples analysed	: 15		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive 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*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Dian Dao		Sydney Inorganics, Smithfield, NSW
Dianne Blane	Laboratory Coordinator (2IC)	Newcastle - Inorganics, Mayfield West, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Gerrad Morgan	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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.

- EA150H: Soil particle density results for #4 fell outside the scope of AS1289.3.6.3. Results should be scrutinised accordingly.
- EP035G: Poor spike recovery for Phenol due to matrix interferences.
- ALS is not NATA accredited for the analysis of Exchangeable Cations on Alkaline Soils when performed under ALS Method ED006.
- EP068: Positive result has been confirmed by re-extraction and re-analysis.
- ASS: EA029 (SPOCAS): Retained Acidity not required because pH KCl greater than or equal to 4.5
- EP075(SIM): Poor duplicate precision due to sample heterogeneity. Confirmed by re-extraction and re-analysis.
- EP075(SIM): Poor matrix spike recovery due to sample heterogeneity. Confirmed by re-extraction and re-analysis.
- ASS: EA029 (SPOCAS): Excess ANC not required because pH OX less than 6.5.
- EP080: The trip spike and its control have been analysed for volatile TPH and BTEX only. The trip spike and control were prepared in the lab using reagent grade sand spiked with petrol. The spike was dispatched from the lab and the control retained.
- EA200N: Asbestos weights and percentages are not covered under the Scope of NATA Accreditation.
  Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present)
  The Asbestos (Fines and Fibrous) weight is calculated from the extracted Fibrous Asbestos and Asbestos Fines as an equivalent weight of 100% Asbestos
  Percentages for Asbestos content in ACM are based on the 2013 NEPM default values.
  All calculations of percentage Asbestos under this method are approximate and should be used as a guide only.
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime ($CaCO_3$) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m3 in-situ soil, multiply reported results x wet bulk density of soil in t/m3.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.
- EA200N: ALS laboratory procedures and methods used for the identification and quantitation of asbestos are consistent with AS4964-2004 and the requirements of the 2013 NEPM for Assessment of Site Contamination

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- 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+).
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH414_0.4	SRT-BH419_0.25	SRT-BH419_0.5	SRT-BH419_1.0	SRT-BH423_0.5
			Client sampling date / time	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1830703-002	ES1830703-003	ES1830703-004	ES1830703-005	ES1830703-006
				Result	Result	Result	Result	Result
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	----	----	11.4	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	14.0	15.6	----	14.3	14.2
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	----	----	7	----	----
EA152: Soil Particle Density								
ø Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	----	----	2.44	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	----	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	----	----	No	No
Asbestos Type	1332-21-4	-	--	-	----	----	-	-
Sample weight (dry)	----	0.01	g	620	----	----	667	287
APPROVED IDENTIFIER:	----	-	--	G.MORGAN	----	----	G.MORGAN	G.MORGAN
EA200N: Asbestos Quantification (non-NATA)								
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	<0.0004	----	----	<0.0004	<0.0004
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	<0.001	----	----	<0.001	<0.001
ø Asbestos Containing Material	1332-21-4	0.1	g	<0.1	----	----	<0.1	<0.1
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)	<0.01	----	----	<0.01	<0.01
ø Weight Used for % Calculation	----	0.0001	kg	0.620	----	----	0.667	0.287
ø Fibrous Asbestos >7mm	----	0.0004	g	<0.0004	----	----	<0.0004	<0.0004
ED006: Exchangeable Cations on Alkaline Soils								
Exchangeable Calcium	----	0.2	meq/100g	----	----	16.2	----	----
Exchangeable Magnesium	----	0.2	meq/100g	----	----	<0.2	----	----
Exchangeable Potassium	----	0.2	meq/100g	----	----	0.5	----	----
Exchangeable Sodium	----	0.2	meq/100g	----	----	<0.2	----	----
Cation Exchange Capacity	----	0.2	meq/100g	----	----	16.7	----	----
Exchangeable Sodium Percent	----	0.2	%	----	----	<0.2	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	----	<5	9
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	<1	<1
Chromium	7440-47-3	2	mg/kg	48	10	----	10	13
Copper	7440-50-8	5	mg/kg	16	27	----	38	58

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH414_0.4	SRT-BH419_0.25	SRT-BH419_0.5	SRT-BH419_1.0	SRT-BH423_0.5
				Client sampling date / time	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1830703-002	ES1830703-003	ES1830703-004	ES1830703-005	ES1830703-006
					Result	Result	Result	Result	Result
EG005T: Total Metals by ICP-AES - Continued									
Lead	7439-92-1	5	mg/kg		**976**	**31**	----	**23**	**250**
Nickel	7440-02-0	2	mg/kg		**17**	**6**	----	**6**	**8**
Zinc	7440-66-6	5	mg/kg		**160**	**58**	----	**64**	**500**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		**0.1**	<0.1	----	<0.1	**0.4**
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	1	mg/kg		<1	----	----	<1	<1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	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		<0.05	<0.05	----	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
^ **Total Chlordane (sum)**	----	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	**0.10**	----	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	**0.10**	----	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH414_0.4	SRT-BH419_0.25	SRT-BH419_0.5	SRT-BH419_1.0	SRT-BH423_0.5
			Client sampling date / time	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1830703-002	ES1830703-003	ES1830703-004	ES1830703-005	ES1830703-006
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	----	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	----	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	----	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
EP074A: Monocyclic Aromatic Hydrocarbons								
Styrene	100-42-5	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	5	mg/kg	<5	----	----	<5	<5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH414_0.4	SRT-BH419_0.25	SRT-BH419_0.5	SRT-BH419_1.0	SRT-BH423_0.5
			Client sampling date / time	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1830703-002	ES1830703-003	ES1830703-004	ES1830703-005	ES1830703-006
				Result	Result	Result	Result	Result
EP074B: Oxygenated Compounds - Continued								
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	----	----	<5	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	----	----	<5	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	----	----	<5	<5
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	----	----	<5	<5
Chloromethane	74-87-3	5	mg/kg	<5	----	----	<5	<5
Vinyl chloride	75-01-4	5	mg/kg	<5	----	----	<5	<5
Bromomethane	74-83-9	5	mg/kg	<5	----	----	<5	<5
Chloroethane	75-00-3	5	mg/kg	<5	----	----	<5	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	----	----	<5	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Iodomethane	74-88-4	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH414_0.4	SRT-BH419_0.25	SRT-BH419_0.5	SRT-BH419_1.0	SRT-BH423_0.5
				Client sampling date / time	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1830703-002	ES1830703-003	ES1830703-004	ES1830703-005	ES1830703-006
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Bromobenzene	108-86-1	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Bromoform	75-25-2	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		<1	----	----	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		**1.2**	<0.5	----	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		**5.8**	<0.5	----	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		**0.7**	<0.5	----	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		**3.4**	<0.5	----	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		**20.0**	**1.1**	----	<0.5	**1.8**
Anthracene	120-12-7	0.5	mg/kg		**5.1**	<0.5	----	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		**17.8**	**1.6**	----	<0.5	**3.8**
Pyrene	129-00-0	0.5	mg/kg		**15.4**	**1.7**	----	<0.5	**4.0**
Benz(a)anthracene	56-55-3	0.5	mg/kg		**6.7**	**0.6**	----	<0.5	**1.7**
Chrysene	218-01-9	0.5	mg/kg		**5.4**	**0.5**	----	<0.5	**1.7**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH414_0.4	SRT-BH419_0.25	SRT-BH419_0.5	SRT-BH419_1.0	SRT-BH423_0.5
				Client sampling date / time	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1830703-002	ES1830703-003	ES1830703-004	ES1830703-005	ES1830703-006
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		**6.6**	**0.6**	----	<0.5	**2.1**
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		**3.0**	<0.5	----	<0.5	**0.8**
Benzo(a)pyrene	50-32-8	0.5	mg/kg		**5.9**	**0.6**	----	<0.5	**2.0**
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		**2.7**	<0.5	----	<0.5	**0.9**
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		**0.9**	<0.5	----	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		**3.3**	<0.5	----	<0.5	**1.2**
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		**104**	**6.7**	----	<0.5	**20.0**
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		**8.8**	**0.7**	----	<0.5	**2.6**
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**8.8**	**1.0**	----	**0.6**	**2.8**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**8.8**	**1.3**	----	**1.2**	**3.1**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	----	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	----	<50	<50
C15 - C28 Fraction	----	100	mg/kg		**320**	<100	----	<100	<100
C29 - C36 Fraction	----	100	mg/kg		**180**	<100	----	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		**500**	<50	----	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	----	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	----	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		**430**	<100	----	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		**110**	<100	----	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		**540**	<50	----	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	----	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	<1	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH414_0.4	SRT-BH419_0.25	SRT-BH419_0.5	SRT-BH419_1.0	SRT-BH423_0.5
				Client sampling date / time	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1830703-002	ES1830703-003	ES1830703-004	ES1830703-005	ES1830703-006
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		116	117	----	122	102
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		107	84.0	----	105	101
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		112	92.7	----	121	104
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		95.6	----	----	100.0	105
Toluene-D8	2037-26-5	0.5	%		97.4	----	----	110	109
4-Bromofluorobenzene	460-00-4	0.5	%		95.5	----	----	105	103
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		82.2	76.6	----	75.6	74.5
2-Chlorophenol-D4	93951-73-6	0.5	%		85.9	72.8	----	75.4	79.9
2.4.6-Tribromophenol	118-79-6	0.5	%		67.2	61.8	----	61.2	60.7
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		94.0	87.2	----	85.6	85.9
Anthracene-d10	1719-06-8	0.5	%		94.9	92.3	----	90.9	89.7
4-Terphenyl-d14	1718-51-0	0.5	%		83.2	79.2	----	78.2	77.6
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		89.1	90.7	----	92.8	95.7
Toluene-D8	2037-26-5	0.2	%		87.8	94.7	----	99.0	98.6
4-Bromofluorobenzene	460-00-4	0.2	%		87.9	97.8	----	96.1	100

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH423_2.0	SRT_BH423_3.0	SRT_BH423_4.15	SRT_BH425_0.15	SRT_QCA104
			Client sampling date / time	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1830703-009	ES1830703-010	ES1830703-011	ES1830703-013	ES1830703-014
				Result	Result	Result	Result	Result
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	9.1	----	----	----	----
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	----	7.4	6.4	----	----
pH OX (23B)	----	0.1	pH Unit	----	6.4	5.6	----	----
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	<2	<2	----	----
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	2	5	----	----
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	2	5	----	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	<0.020	<0.020	----	----
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	<0.020	<0.020	----	----
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	<0.020	<0.020	----	----
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	<0.020	<0.020	----	----
Peroxide Sulfur (23De)	----	0.020	% S	----	<0.020	<0.020	----	----
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	<0.020	<0.020	----	----
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	<10	<10	----	----
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	0.039	<0.020	----	----
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	0.040	<0.020	----	----
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	<0.020	<0.020	----	----
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	<10	<10	----	----
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	<0.020	<0.020	----	----
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	<0.020	<0.020	----	----
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	<0.020	<0.020	----	----
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	<0.020	<0.020	----	----
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	<10	<10	----	----
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	<0.020	<0.020	----	----
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	1.5	1.5	----	----
Net Acidity (sulfur units)	----	0.02	% S	----	<0.02	<0.02	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH423_2.0	SRT_BH423_3.0	SRT_BH423_4.15	SRT_BH425_0.15	SRT_QCA104
			Client sampling date / time	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1830703-009	ES1830703-010	ES1830703-011	ES1830703-013	ES1830703-014
				Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued								
Net Acidity (acidity units)	----	10	mole H+ / t	----	<10	<10	----	----
Liming Rate	----	1	kg CaCO3/t	----	<1	<1	----	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	<0.02	<0.02	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	<10	<10	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	<1	<1	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	3.6	----	21.2	14.4	13.5
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	1	----	----	----	----
EA152: Soil Particle Density								
ø Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	2.62	----	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	----	No	----
Asbestos (Trace)	1332-21-4	5	Fibres	----	----	----	No	----
Asbestos Type	1332-21-4	-	--	----	----	----	-	----
Sample weight (dry)	----	0.01	g	----	----	----	598	----
APPROVED IDENTIFIER:	----	-	--	----	----	----	G.MORGAN	----
EA200N: Asbestos Quantification (non-NATA)								
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	----	----	----	<0.0004	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	----	----	----	<0.001	----
ø Asbestos Containing Material	1332-21-4	0.1	g	----	----	----	<0.1	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)	----	----	----	<0.01	----
ø Weight Used for % Calculation	----	0.0001	kg	----	----	----	0.598	----
ø Fibrous Asbestos >7mm	----	0.0004	g	----	----	----	<0.0004	----
ED006: Exchangeable Cations on Alkaline Soils								
Exchangeable Calcium	----	0.2	meq/100g	<0.2	----	----	----	----
Exchangeable Magnesium	----	0.2	meq/100g	<0.2	----	----	----	----
Exchangeable Potassium	----	0.2	meq/100g	<0.2	----	----	----	----
Exchangeable Sodium	----	0.2	meq/100g	<0.2	----	----	----	----
Cation Exchange Capacity	----	0.2	meq/100g	<0.2	----	----	----	----
Exchangeable Sodium Percent	----	0.2	%	<0.2	----	----	----	----
EG005T: Total Metals by ICP-AES								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH423_2.0	SRT_BH423_3.0	SRT_BH423_4.15	SRT_BH425_0.15	SRT_QCA104
				Client sampling date / time	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1830703-009	ES1830703-010	ES1830703-011	ES1830703-013	ES1830703-014
					Result	Result	Result	Result	Result
EG005T: Total Metals by ICP-AES - Continued									
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		<2	----	<2	**8**	**10**
Copper	7440-50-8	5	mg/kg		<5	----	<5	**128**	**32**
Lead	7439-92-1	5	mg/kg		**7**	----	<5	**1100**	**28**
Nickel	7440-02-0	2	mg/kg		<2	----	<2	**7**	**6**
Zinc	7440-66-6	5	mg/kg		<5	----	**6**	**566**	**65**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	<0.1	**1.1**	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	0.5	mg/kg		----	----	<0.5	----	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg		----	----	<0.5	----	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg		----	----	<0.5	----	<0.5
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		----	----	<0.5	----	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		----	----	<0.5	----	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg		----	----	<0.5	----	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg		----	----	<0.5	----	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg		----	----	<0.5	----	<0.5
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		----	----	<5	----	<5
2-Butanone (MEK)	78-93-3	5	mg/kg		----	----	<5	----	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		----	----	<5	----	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg		----	----	<5	----	<5
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		----	----	<0.5	----	<0.5
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2-Dichloropropane	78-87-5	0.5	mg/kg		----	----	<0.5	----	<0.5
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		----	----	<0.5	----	<0.5
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		----	----	<0.5	----	<0.5
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		----	----	<5	----	<5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH423_2.0	SRT_BH423_3.0	SRT_BH423_4.15	SRT_BH425_0.15	SRT_QCA104
				Client sampling date / time	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1830703-009	ES1830703-010	ES1830703-011	ES1830703-013	ES1830703-014
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
Chloromethane	74-87-3	5	mg/kg		----	----	<5	----	<5
Vinyl chloride	75-01-4	5	mg/kg		----	----	<5	----	<5
Bromomethane	74-83-9	5	mg/kg		----	----	<5	----	<5
Chloroethane	75-00-3	5	mg/kg		----	----	<5	----	<5
Trichlorofluoromethane	75-69-4	5	mg/kg		----	----	<5	----	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg		----	----	<0.5	----	<0.5
Iodomethane	74-88-4	0.5	mg/kg		----	----	<0.5	----	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		----	----	<0.5	----	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg		----	----	<0.5	----	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		----	----	<0.5	----	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		----	----	<0.5	----	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		----	----	<0.5	----	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg		----	----	<0.5	----	<0.5
Trichloroethene	79-01-6	0.5	mg/kg		----	----	<0.5	----	<0.5
Dibromomethane	74-95-3	0.5	mg/kg		----	----	<0.5	----	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		----	----	<0.5	----	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg		----	----	<0.5	----	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg		----	----	<0.5	----	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		----	----	<0.5	----	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		----	----	<0.5	----	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		----	----	<0.5	----	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		----	----	<0.5	----	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		----	----	<0.5	----	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg		----	----	<0.5	----	<0.5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		----	----	<0.5	----	<0.5
Bromobenzene	108-86-1	0.5	mg/kg		----	----	<0.5	----	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg		----	----	<0.5	----	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg		----	----	<0.5	----	<0.5
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		----	----	<0.5	----	<0.5
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		----	----	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH423_2.0	SRT_BH423_3.0	SRT_BH423_4.15	SRT_BH425_0.15	SRT_QCA104
				Client sampling date / time	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1830703-009	ES1830703-010	ES1830703-011	ES1830703-013	ES1830703-014
					Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued									
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		----	----	<0.5	----	<0.5
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		----	----	<0.5	----	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg		----	----	<0.5	----	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg		----	----	<0.5	----	<0.5
Bromoform	75-25-2	0.5	mg/kg		----	----	<0.5	----	<0.5
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		----	----	<1	----	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	<0.5	**1.6**	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	<0.5	**6.3**	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	<0.5	**0.6**	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	<0.5	**2.9**	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	<0.5	**29.5**	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	<0.5	**9.2**	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	<0.5	**47.3**	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	<0.5	**42.0**	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	<0.5	**20.7**	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	<0.5	**17.5**	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	<0.5	**21.0**	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	<0.5	**9.2**	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	<0.5	**19.0**	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	<0.5	**8.1**	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	<0.5	**2.6**	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	<0.5	**9.2**	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	<0.5	**247**	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	<0.5	**27.8**	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	**0.6**	**27.8**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	**1.2**	**27.8**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	----	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	----	<100	**720**	<100

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH423_2.0	SRT_BH423_3.0	SRT_BH423_4.15	SRT_BH425_0.15	SRT_QCA104
				Client sampling date / time	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1830703-009	ES1830703-010	ES1830703-011	ES1830703-013	ES1830703-014
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C29 - C36 Fraction	----	100	mg/kg		<100	----	<100	**480**	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	<50	**1200**	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	----	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	----	<100	**1070**	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	----	<100	**300**	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	<50	**1370**	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	**1**	<1
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		----	----	**97.6**	----	**96.8**
Toluene-D8	2037-26-5	0.5	%		----	----	**97.9**	----	**101**
4-Bromofluorobenzene	460-00-4	0.5	%		----	----	**93.2**	----	**96.5**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**77.0**	----	**76.0**	**75.8**	**78.7**
2-Chlorophenol-D4	93951-73-6	0.5	%		**83.4**	----	**82.8**	**82.6**	**76.4**
2.4.6-Tribromophenol	118-79-6	0.5	%		**53.9**	----	**51.9**	**72.2**	**54.4**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**89.6**	----	**89.0**	**93.0**	**89.2**
Anthracene-d10	1719-06-8	0.5	%		**93.3**	----	**91.8**	**89.3**	**94.5**
4-Terphenyl-d14	1718-51-0	0.5	%		**81.2**	----	**81.1**	**83.4**	**81.7**
EP080S: TPH(V)/BTEX Surrogates									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH423_2.0	SRT_BH423_3.0	SRT_BH423_4.15	SRT_BH425_0.15	SRT_QCA104
				Client sampling date / time	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1830703-009	ES1830703-010	ES1830703-011	ES1830703-013	ES1830703-014
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**87.8**	**----**	**90.6**	**78.1**	**89.0**
Toluene-D8	2037-26-5	0.2	%		**92.9**	**----**	**88.8**	**81.8**	**91.5**
4-Bromofluorobenzene	460-00-4	0.2	%		**92.4**	**----**	**90.9**	**84.8**	**89.3**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	Trip Blank 104	Trip spike 104	Trip Spike Control	----	----
			Client sampling date / time	12-Oct-2018 00:00	08-Oct-2018 00:00	08-Oct-2018 00:00	----	----
Compound	CAS Number	LOR	Unit	ES1830703-015	ES1830703-016	ES1830703-019	--------	--------
				Result	Result	Result	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	**11**	**12**	**----**	**----**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	**15**	**16**	**----**	**----**
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg	<10	<10	<10	**----**	**----**
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	**----**	**----**
Toluene	108-88-3	0.5	mg/kg	<0.5	**3.4**	**3.8**	**----**	**----**
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	**----**	**----**
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	**2.3**	**2.5**	**----**	**----**
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	**0.9**	**1.0**	**----**	**----**
^ **Sum of BTEX**	----	0.2	mg/kg	<0.2	**6.6**	**7.3**	**----**	**----**
^ **Total Xylenes**	----	0.5	mg/kg	<0.5	**3.2**	**3.5**	**----**	**----**
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	**----**	**----**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**83.3**	**91.8**	**89.0**	**----**	**----**
Toluene-D8	2037-26-5	0.2	%	**89.0**	**85.4**	**82.6**	**----**	**----**
4-Bromofluorobenzene	460-00-4	0.2	%	**92.2**	**86.3**	**88.8**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	RB104	RB105	----	----	----
			Client sampling date / time	13-Oct-2018 00:00	14-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES1830703-017	ES1830703-018	--------	--------	--------
				Result	Result	----	----	----
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
^ **Total Polychlorinated biphenyls**	----	1	µg/L	<1	<1	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	----	----	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	----	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	----	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	----	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	----	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	----	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	----	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	----	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	----	----	----
^ **Total Chlordane (sum)**	----	0.5	µg/L	<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	RB104	RB105	----	----	----
				Client sampling date / time	13-Oct-2018 00:00	14-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1830703-017	ES1830703-018	--------	--------	--------
					Result	Result	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L		<0.5	<0.5	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L		<0.5	<0.5	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L		<0.5	<0.5	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L		<0.5	<0.5	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L		<2.0	<2.0	----	----	----
Dimethoate	60-51-5	0.5	µg/L		<0.5	<0.5	----	----	----
Diazinon	333-41-5	0.5	µg/L		<0.5	<0.5	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L		<0.5	<0.5	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L		<2.0	<2.0	----	----	----
Malathion	121-75-5	0.5	µg/L		<0.5	<0.5	----	----	----
Fenthion	55-38-9	0.5	µg/L		<0.5	<0.5	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L		<0.5	<0.5	----	----	----
Parathion	56-38-2	2.0	µg/L		<2.0	<2.0	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L		<0.5	<0.5	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L		<0.5	<0.5	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L		<0.5	<0.5	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L		<0.5	<0.5	----	----	----
Prothiofos	34643-46-4	0.5	µg/L		<0.5	<0.5	----	----	----
Ethion	563-12-2	0.5	µg/L		<0.5	<0.5	----	----	----
Carbophenothion	786-19-6	0.5	µg/L		<0.5	<0.5	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L		<0.5	<0.5	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	RB104	RB105	----	----	----
				Client sampling date / time	13-Oct-2018 00:00	14-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1830703-017	ES1830703-018	--------	--------	--------
					Result	Result	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	----	----	----
Toluene	108-88-3	2	µg/L		<2	<2	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	----	----	----
^ Total Xylenes	----	2	µg/L		<2	<2	----	----	----
^ Sum of BTEX	----	1	µg/L		<1	<1	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		**89.9**	**86.5**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	RB104	RB105	----	----	----
				Client sampling date / time	13-Oct-2018 00:00	14-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1830703-017	ES1830703-018	--------	--------	--------
					Result	Result	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		**85.6**	**84.4**	**----**	**----**	**----**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		**69.6**	**70.6**	**----**	**----**	**----**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**29.3**	**28.5**	**----**	**----**	**----**
2-Chlorophenol-D4	93951-73-6	1.0	%		**66.4**	**62.0**	**----**	**----**	**----**
2.4.6-Tribromophenol	118-79-6	1.0	%		**58.1**	**49.5**	**----**	**----**	**----**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**80.7**	**81.4**	**----**	**----**	**----**
Anthracene-d10	1719-06-8	1.0	%		**90.7**	**89.0**	**----**	**----**	**----**
4-Terphenyl-d14	1718-51-0	1.0	%		**94.9**	**97.6**	**----**	**----**	**----**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**107**	**106**	**----**	**----**	**----**
Toluene-D8	2037-26-5	2	%		**104**	**105**	**----**	**----**	**----**
4-Bromofluorobenzene	460-00-4	2	%		**98.6**	**98.6**	**----**	**----**	**----**

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	SRT-BH414_0.4 - 13-Oct-2018 00:00	Mid grey sandy soil.
EA200: Description	SRT-BH419_1.0 - 13-Oct-2018 00:00	Mid grey sandy soil.
EA200: Description	SRT-BH423_0.5 - 13-Oct-2018 00:00	Mid grey sandy soil.
EA200: Description	SRT_BH425_0.15 - 13-Oct-2018 00:00	Mid grey sandy soil.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	29	129
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP075(SIM)T: PAH Surrogates - Continued			
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES1830703**	Page	: 1 of 22
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 16-Oct-2018
Order number	: .	Date Analysis Commenced	: 17-Oct-2018
C-O-C number	: ----	Issue Date	: 24-Oct-2018
Sampler	: ----		
Site	: 1791865 - SM TSE		
Quote number	: SY/698/17 C V4		
No. of samples received	: 20		
No. of samples analysed	: 15		

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

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

This Quality Control Report contains the following information:

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

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*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Dian Dao		Sydney Inorganics, Smithfield, NSW
Dianne Blane	Laboratory Coordinator (2IC)	Newcastle - Inorganics, Mayfield West, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Gerrad Morgan	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA002: pH 1:5 (Soils) (QC Lot: 1988948)									
ES1830606-002	Anonymous	EA002: pH Value	----	0.1	pH Unit	12.2	12.3	0.00	0% - 20%
EA029-A: pH Measurements (QC Lot: 1992226)									
ES1830167-002	Anonymous	EA029: pH KCl (23A)	----	0.1	pH Unit	5.3	5.3	0.00	0% - 20%
		EA029: pH OX (23B)	----	0.1	pH Unit	6.4	6.4	0.00	0% - 20%
ES1830167-023	Anonymous	EA029: pH KCl (23A)	----	0.1	pH Unit	4.3	4.4	2.30	0% - 20%
		EA029: pH OX (23B)	----	0.1	pH Unit	3.5	3.5	0.00	0% - 20%
EA029-B: Acidity Trail (QC Lot: 1992226)									
ES1830167-002	Anonymous	EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	0.025	0.026	0.00	No Limit
		EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	0.027	0.029	10.00	No Limit
		EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	16	16	0.00	No Limit
		EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	17	18	10.00	No Limit
		EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	2	0.00	No Limit
ES1830167-023	Anonymous	EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	0.085	0.081	5.34	No Limit
		EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	0.166	0.162	2.44	No Limit
		EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	0.081	0.082	0.00	No Limit
		EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	53	50	5.34	0% - 20%
		EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	104	101	2.44	0% - 20%
		EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	51	51	0.00	0% - 20%
EA029-C: Sulfur Trail (QC Lot: 1992226)									
ES1830167-002	Anonymous	EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	<0.020	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA029-C: Sulfur Trail (QC Lot: 1992226) - continued									
ES1830167-002	Anonymous	EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	<10	0.00	No Limit
ES1830167-023	Anonymous	EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Sulfur (23De)	----	0.02	% S	0.077	0.083	7.88	No Limit
		EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	0.077	0.083	7.88	No Limit
		EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	48	52	7.88	No Limit
EA029-D: Calcium Values (QC Lot: 1992226)									
ES1830167-002	Anonymous	EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	0.076	0.080	4.61	No Limit
		EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	0.085	0.085	0.00	No Limit
		EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	<10	0.00	No Limit
ES1830167-023	Anonymous	EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	0.027	0.027	0.00	No Limit
		EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	0.029	0.032	7.89	No Limit
		EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-E: Magnesium Values (QC Lot: 1992226)									
ES1830167-002	Anonymous	EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	0.122	0.125	2.59	No Limit
		EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	0.139	0.140	0.00	No Limit
		EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	0.023	<0.020	13.7	No Limit
		EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	14	12	17.5	No Limit
ES1830167-023	Anonymous	EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	0.023	0.022	4.84	No Limit
		EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	0.026	0.027	5.65	No Limit
		EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-H: Acid Base Accounting (QC Lot: 1992226)									
ES1830167-002	Anonymous	EA029: ANC Fineness Factor	----	0.5	-	1.5	1.5	0.00	No Limit
		EA029: Net Acidity (sulfur units)	----	0.02	% S	0.02	0.02	0.00	No Limit
		EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	0.02	0.02	0.00	No Limit
		EA029: Liming Rate	----	1	kg CaCO3/t	1	1	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA029-H: Acid Base Accounting (QC Lot: 1992226) - continued									
ES1830167-002	Anonymous	EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	1	1	0.00	No Limit
		EA029: Net Acidity (acidity units)	----	10	mole H+ / t	16	16	0.00	No Limit
		EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	16	16	0.00	No Limit
ES1830167-023	Anonymous	EA029: ANC Fineness Factor	----	0.5	-	1.5	1.5	0.00	No Limit
		EA029: Net Acidity (sulfur units)	----	0.02	% S	0.17	0.17	0.00	No Limit
		EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	0.17	0.17	0.00	No Limit
		EA029: Liming Rate	----	1	kg CaCO3/t	8	8	0.00	No Limit
		EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	8	8	0.00	No Limit
		EA029: Net Acidity (acidity units)	----	10	mole H+ / t	106	106	0.00	0% - 50%
		EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	106	106	0.00	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 1989441)									
ES1830703-005	SRT-BH419_1.0	EA055: Moisture Content	----	0.1	%	14.3	14.4	0.00	0% - 50%
ES1830736-001	Anonymous	EA055: Moisture Content	----	0.1	%	39.2	44.2	12.0	0% - 20%
ED006: Exchangeable Cations on Alkaline Soils (QC Lot: 1995255)									
ES1830539-026	Anonymous	ED006: Exchangeable Sodium Percent	----	0.2	%	36.6	36.5	0.00	0% - 20%
		ED006: Exchangeable Calcium	----	0.2	meq/100g	<0.2	<0.2	0.00	No Limit
		ED006: Exchangeable Magnesium	----	0.2	meq/100g	13.5	12.6	7.00	0% - 20%
		ED006: Exchangeable Potassium	----	0.2	meq/100g	0.4	0.4	0.00	No Limit
		ED006: Exchangeable Sodium	----	0.2	meq/100g	8.0	7.5	7.37	0% - 20%
		ED006: Cation Exchange Capacity	----	0.2	meq/100g	22.0	20.5	7.23	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 1991639)									
ES1830434-002	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	4	3	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	22	20	13.7	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.00	No Limit
ES1830698-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	2	2	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	294	302	2.41	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	35	34	3.22	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	216	214	0.771	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	103	97	5.64	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	17200	16700	3.07	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 1991641)									
ES1830703-011	SRT_BH423_4.15	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005T: Total Metals by ICP-AES (QC Lot: 1991641) - continued									
ES1830703-011	SRT_BH423_4.15	EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	6	8	15.6	No Limit
ES1831028-005	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	3	3	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1991640)									
ES1830698-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.3	0.3	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1991642)									
ES1830703-011	SRT_BH423_4.15	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1831028-005	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP035G: Total Phenol by Discrete Analyser (QC Lot: 1994304)									
ES1830700-001	Anonymous	EP035G: Phenols (Total)	----	1	mg/kg	<1	<1	0.00	No Limit
ES1830703-006	SRT-BH423_0.5	EP035G: Phenols (Total)	----	1	mg/kg	<1	<1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 1986562)									
ES1830703-002	SRT-BH414_0.4	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1986565)									
ES1830703-002	SRT-BH414_0.4	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1986565) - continued									
ES1830703-002	SRT-BH414_0.4	EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1986565)									
ES1830703-002	SRT-BH414_0.4	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1986632)									
ES1830703-002	SRT-BH414_0.4	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074B: Oxygenated Compounds (QC Lot: 1986632)									
ES1830703-002	SRT-BH414_0.4	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074C: Sulfonated Compounds (QC Lot: 1986632)									
ES1830703-002	SRT-BH414_0.4	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074D: Fumigants (QC Lot: 1986632)									
ES1830703-002	SRT-BH414_0.4	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 1986632)									
ES1830703-002	SRT-BH414_0.4	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 1986632)									
ES1830703-002	SRT-BH414_0.4	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074F: Halogenated Aromatic Compounds (QC Lot: 1986632) - continued									
ES1830703-002	SRT-BH414_0.4	EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 1986632)									
ES1830703-002	SRT-BH414_0.4	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074H: Naphthalene (QC Lot: 1986632)									
ES1830703-002	SRT-BH414_0.4	EP074: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1986564)									
ES1830703-002	SRT-BH414_0.4	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	1.2	0.6	57.9	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	5.8	3.7	45.4	0% - 50%
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	0.7	<0.5	38.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	3.4	2.5	32.6	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	20.0	# 14.7	30.3	0% - 20%
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	5.1	3.7	32.6	0% - 50%
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	17.8	# 12.7	33.7	0% - 20%
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	15.4	# 10.9	34.5	0% - 20%
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	6.7	4.4	41.7	0% - 50%
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	5.4	3.5	44.5	0% - 50%
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	6.6	4.0	48.3	0% - 50%
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	3.0	1.7	54.2	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	5.9	3.8	43.0	0% - 50%
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	2.7	1.6	47.8	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	0.9	0.6	46.9	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	3.3	2.0	49.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	104	# 70.4	38.4	0% - 20%
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	8.8	5.6	43.9	0% - 50%
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1986243)									
ES1830473-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1830703-013	SRT_BH425_0.15	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1986563)									
ES1830703-002	SRT-BH414_0.4	EP071: C15 - C28 Fraction	----	100	mg/kg	320	530	50.7	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1986563) - continued									
ES1830703-002	SRT-BH414_0.4	EP071: C29 - C36 Fraction	----	100	mg/kg	180	230	25.1	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1986631)									
ES1830703-002	SRT-BH414_0.4	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1986243)									
ES1830473-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1830703-013	SRT_BH425_0.15	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1986563)									
ES1830703-002	SRT-BH414_0.4	EP071: >C16 - C34 Fraction	----	100	mg/kg	430	680	45.3	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	110	120	13.8	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1986631)									
ES1830703-002	SRT-BH414_0.4	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080: BTEXN (QC Lot: 1986243)									
ES1830473-002	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES1830703-013	SRT_BH425_0.15	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	1	2	0.00	No Limit
EP080: BTEXN (QC Lot: 1986631)									
ES1830703-002	SRT-BH414_0.4	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020T: Total Metals by ICP-MS (QC Lot: 1990419)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 1990419) - continued									
ES1830703-017	RB104	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
ES1830723-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.056	0.057	0.00	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.007	0.007	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.015	0.018	17.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1986492)									
ES1830599-008	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
ES1830607-009	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1987444)									
EB1824772-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
ES1830717-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	120	120	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1987444)									
EB1824772-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
ES1830717-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	120	130	0.00	No Limit
EP080: BTEXN (QC Lot: 1987444)									
EB1824772-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
ES1830717-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	97	96	1.48	0% - 20%
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit

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

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA029-A: pH Measurements (QCLot: 1992226)								
EA029: pH KCl (23A)	----	0.1	pH Unit	<0.1	4.6 pH Unit	97.8	70	130
EA029: pH OX (23B)	----	0.1	pH Unit	<0.1	4.3 pH Unit	95.3	70	130
EA029-B: Acidity Trail (QCLot: 1992226)								
EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	17.7 mole H+ / t	108	70	130
EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	35.2 mole H+ / t	88.8	70	130
EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	----	----	----	----
EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029-C: Sulfur Trail (QCLot: 1992226)								
EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	0.052 % S	88.4	70	130
EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	0.158 % S	88.9	70	130
EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	----	----	----	----
EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	----	----	----	----
EA029-D: Calcium Values (QCLot: 1992226)								
EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	<0.020	0.097 % Ca	115	70	130
EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	<0.020	0.22 % Ca	96.6	70	130
EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	----	----	----	----
EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	----	----	----	----
EA029-E: Magnesium Values (QCLot: 1992226)								
EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	0.25 % Mg	79.5	70	130
EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	0.234 % Mg	75.9	70	130
EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	----	----	----	----
EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	----	----	----	----
EA029-H: Acid Base Accounting (QCLot: 1992226)								
EA029: ANC Fineness Factor	----	0.5	-	<0.5	----	----	----	----
EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate	----	1	kg CaCO3/t	<1	----	----	----	----
EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	----	----	----	----

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
ED006: Exchangeable Cations on Alkaline Soils (QCLot: 1995255)								
ED006: Exchangeable Calcium	----	0.2	meq/100g	<0.2	2.5 meq/100g	99.6	80	110
ED006: Exchangeable Magnesium	----	0.2	meq/100g	<0.2	4.17 meq/100g	99.5	80	110
ED006: Exchangeable Potassium	----	0.2	meq/100g	<0.2	1.28 meq/100g	99.2	80	110
ED006: Exchangeable Sodium	----	0.2	meq/100g	<0.2	2.17 meq/100g	97.7	80	110
ED006: Cation Exchange Capacity	----	0.2	meq/100g	<0.2	----	----	----	----
ED006: Exchangeable Sodium Percent	----	0.2	%	<0.2	----	----	----	----
EG005T: Total Metals by ICP-AES (QCLot: 1991639)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	103	86	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	100	83	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	102	76	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	108	86	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	106	80	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	106	87	123
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	106	80	122
EG005T: Total Metals by ICP-AES (QCLot: 1991641)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	100.0	86	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	104	83	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	104	76	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	105	86	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	106	80	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	109	87	123
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	109	80	122
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1991640)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	79.8	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1991642)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	75.5	70	105
EP035G: Total Phenol by Discrete Analyser (QCLot: 1994304)								
EP035G: Phenols (Total)	----	1	mg/kg	<1	5 mg/kg	67.8	60	102
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1986562)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	104	62	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 1986565)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	107	69	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	97.2	65	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	108	67	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	105	68	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	108	65	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	106	67	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	107	69	115

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 1986565) - continued								
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	107	62	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	106	63	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	105	66	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	108	64	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	106	66	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	104	67	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	104	67	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	105	69	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	105	69	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	93.8	56	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	102	62	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	99.8	66	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	103	64	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	99.7	54	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1986565)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	105	59	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.7	62	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	79.5	54	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	96.4	67	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	104	70	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	106	72	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	93.8	68	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	100	68	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	107	69	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	109	76	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	97.1	64	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	107	70	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	101	69	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	105	66	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.6	68	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	108	62	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	107	68	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	100	65	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	61.5	41	123
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1986632)								
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	94.3	67	113
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	93.9	65	117
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	101	66	122
EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	98.4	68	118

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1986632) - continued								
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	98.1	69	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	102	69	117
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	96.7	69	115
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	93.8	66	118
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	97.6	59	125
EP074B: Oxygenated Compounds (QCLot: 1986632)								
EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	10 mg/kg	101	30	156
EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	10 mg/kg	98.6	58	136
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	10 mg/kg	105	62	132
EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	10 mg/kg	105	54	136
EP074C: Sulfonated Compounds (QCLot: 1986632)								
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	90.6	54	126
EP074D: Fumigants (QCLot: 1986632)								
EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	97.0	60	126
EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	103	68	124
EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	96.9	51	119
EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	86.8	52	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	101	63	115
EP074E: Halogenated Aliphatic Compounds (QCLot: 1986632)								
EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	10 mg/kg	81.5	30	148
EP074: Chloromethane	74-87-3	5	mg/kg	<5	10 mg/kg	89.4	41	141
EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	10 mg/kg	86.1	43	147
EP074: Bromomethane	74-83-9	5	mg/kg	<5	10 mg/kg	91.7	47	141
EP074: Chloroethane	75-00-3	5	mg/kg	<5	10 mg/kg	93.2	49	143
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	10 mg/kg	89.2	49	135
EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	94.7	54	126
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	78.3	43	129
EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	92.8	64	120
EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	88.2	67	125
EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	104	69	121
EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	98.3	65	117
EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	94.0	65	123
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	91.8	59	125
EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	104	65	125
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	96.0	70	118
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	89.8	68	118
EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	103	64	126
EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	97.2	68	122

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 1986632) - continued								
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	85.5	67	143
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	98.2	62	122
EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	111	54	128
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	84.3	55	129
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	98.8	65	121
EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	98.0	61	125
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	94.2	20	134
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	125	53	129
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	99.8	50	128
EP074F: Halogenated Aromatic Compounds (QCLot: 1986632)								
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	99.5	68	116
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	97.1	70	114
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	100	68	122
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	97.5	67	123
EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	102	70	116
EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	102	67	117
EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	98.5	70	114
EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	100	48	122
EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	97.4	52	122
EP074G: Trihalomethanes (QCLot: 1986632)								
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	98.1	66	124
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	97.2	61	121
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	90.5	63	121
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	91.9	60	126
EP074H: Naphthalene (QCLot: 1986632)								
EP074: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	100	67	129
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1986564)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	112	77	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	118	72	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	110	73	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	115	72	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	122	75	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	110	77	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	125	73	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	126	74	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	104	69	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	113	75	127

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1986564) - continued								
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	102	68	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	113	74	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	106	70	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	99.5	61	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	103	62	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	99.6	63	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1986243)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	80.1	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1986563)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	105	75	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	106	77	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	98.0	71	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1986631)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	92.5	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1986243)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	84.4	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1986563)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	103	77	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	105	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	74.0	63	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1986631)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	101	68	128
EP080: BTEXN (QCLot: 1986243)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	85.5	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	87.1	67	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	82.5	65	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	80.7	66	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	82.7	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	78.0	63	119
EP080: BTEXN (QCLot: 1986631)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	100	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	105	67	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	100	65	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	102	66	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	102	68	120

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080: BTEXN (QCLot: 1986631) - continued								
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	98.5	63	119

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 1990419)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	101	82	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	100	84	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	99.4	86	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	98.8	83	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	97.9	85	115
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	101	84	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	104	79	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1986492)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	89.4	77	111
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1986443)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	96.0	62	107
EP068A: Organochlorine Pesticides (OC) (QCLot: 1986442)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	94.7	65	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	97.1	58	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	89.6	69	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	95.2	70	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	91.2	69	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	84.1	65	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	85.8	66	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	81.7	67	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	78.3	64	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	87.8	67	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	78.2	63	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	85.0	65	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	83.6	66	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	81.2	65	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	88.0	67	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	84.6	72	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	83.7	67	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	89.8	65	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	80.0	65	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	85.2	64	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	82.2	61	114

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1986442)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	89.9	66	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	76.4	64	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	23.2	20	48
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	83.9	70	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	86.1	71	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	84.5	77	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	78.1	70	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	83.4	68	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	80.5	69	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	84.2	75	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	76.1	67	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	77.3	69	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	86.3	72	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	78.1	68	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	77.3	64	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	83.3	68	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	82.1	74	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	84.7	66	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	94.5	52	128
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1986440)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	73.2	50	94
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	90.2	64	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	85.8	62	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	88.4	64	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	101	63	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	103	64	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	93.5	64	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	93.4	63	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	87.8	64	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	85.7	63	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	87.8	62	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	99.4	63	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	91.7	63	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	84.1	60	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	88.3	61	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	81.9	59	118
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1986441)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	97.3	76	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1986441) - continued								
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	87.6	83	109
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	90.2	75	113
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1987444)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	79.5	75	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1986441)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	2500 µg/L	84.2	76	114
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	3500 µg/L	102	81	111
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1500 µg/L	81.5	77	119
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1987444)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	79.9	75	127
EP080: BTEXN (QCLot: 1987444)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	99.8	70	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	95.1	69	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	91.3	70	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	91.1	69	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	93.8	72	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	102	70	120

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005T: Total Metals by ICP-AES (QCLot: 1991639)							
ES1830434-002	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	95.9	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	93.2	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	101	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	96.2	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	96.5	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	102	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	98.4	70	130
EG005T: Total Metals by ICP-AES (QCLot: 1991641)							
ES1830703-011	SRT_BH423_4.15	EG005T: Arsenic	7440-38-2	50 mg/kg	102	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	103	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	103	70	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 1991641) - continued							
ES1830703-011	SRT_BH423_4.15	EG005T: Copper	7440-50-8	250 mg/kg	98.6	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	102	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	103	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	106	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1991640)							
ES1830434-002	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	82.3	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1991642)							
ES1830703-011	SRT_BH423_4.15	EG035T: Mercury	7439-97-6	5 mg/kg	80.8	70	130
EP035G: Total Phenol by Discrete Analyser (QCLot: 1994304)							
ES1830700-001	Anonymous	EP035G: Phenols (Total)	----	4.2 mg/kg	# 55.5	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1986562)							
ES1830703-002	SRT-BH414_0.4	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	120	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 1986565)							
ES1830703-002	SRT-BH414_0.4	EP068: gamma-BHC	58-89-9	0.5 mg/kg	90.4	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	88.2	70	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	94.8	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	102	70	130
		EP068: Endrin	72-20-8	2 mg/kg	85.3	70	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	79.3	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1986565)							
ES1830703-002	SRT-BH414_0.4	EP068: Diazinon	333-41-5	0.5 mg/kg	86.9	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	81.2	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	85.7	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	85.2	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	72.5	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 1986632)							
ES1830700-002	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	2.5 mg/kg	74.3	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	83.0	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 1986632)							
ES1830700-002	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	97.7	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1986564)							
ES1830703-002	SRT-BH414_0.4	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	94.9	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	# 22.0	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1986243)							
ES1830473-002	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	83.1	70	130

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1986563)							
ES1830703-002	SRT-BH414_0.4	EP071: C10 - C14 Fraction	----	523 mg/kg	106	73	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	108	53	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	106	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1986631)							
ES1830703-002	SRT-BH414_0.4	EP080: C6 - C9 Fraction	----	32.5 mg/kg	76.2	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1986243)							
ES1830473-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	88.3	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1986563)							
ES1830703-002	SRT-BH414_0.4	EP071: >C10 - C16 Fraction	----	860 mg/kg	106	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	113	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	111	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1986631)							
ES1830703-002	SRT-BH414_0.4	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	83.0	70	130
EP080: BTEXN (QCLot: 1986243)							
ES1830473-002	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	79.6	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	80.0	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	78.9	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	76.4	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	79.5	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	79.1	70	130
EP080: BTEXN (QCLot: 1986631)							
ES1830703-002	SRT-BH414_0.4	EP080: Benzene	71-43-2	2.5 mg/kg	85.1	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	87.4	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	86.5	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	89.9	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	89.4	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	95.7	70	130

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 1990419)							
ES1830703-018	RB105	EG020A-T: Arsenic	7440-38-2	1 mg/L	102	70	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	104	70	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	104	70	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EG020T: Total Metals by ICP-MS (QCLot: 1990419) - continued							
ES1830703-018	RB105	EG020A-T: Copper	7440-50-8	1 mg/L	104	70	130
		EG020A-T: Lead	7439-92-1	1 mg/L	106	70	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	104	70	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	104	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1986492)							
ES1830601-013	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	92.6	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1987444)							
EB1824772-002	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	88.6	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1987444)							
EB1824772-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	87.7	70	130
EP080: BTEXN (QCLot: 1987444)							
EB1824772-002	Anonymous	EP080: Benzene	71-43-2	25 µg/L	106	70	130
		EP080: Toluene	108-88-3	25 µg/L	100	70	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	97.9	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	96.9	70	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	102	70	130
		EP080: Naphthalene	91-20-3	25 µg/L	97.4	70	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES1830703**	Page	: 1 of 14
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 16-Oct-2018
Site	: 1791865 - SM TSE	Issue Date	: 24-Oct-2018
Sampler	: ----	No. of samples received	: 20
Order number	: .	No. of samples analysed	: 15

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

- **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							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	ES1830703--002	SRT-BH414_0.4	**Phenanthrene**	85-01-8	30.3 %	0% - 20%	**RPD exceeds LOR based limits**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	ES1830703--002	SRT-BH414_0.4	**Fluoranthene**	206-44-0	33.7 %	0% - 20%	**RPD exceeds LOR based limits**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	ES1830703--002	SRT-BH414_0.4	**Pyrene**	129-00-0	34.5 %	0% - 20%	**RPD exceeds LOR based limits**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	ES1830703--002	SRT-BH414_0.4	**Sum of polycyclic aromatic hydrocarbons**	----	38.4 %	0% - 20%	**RPD exceeds LOR based limits**
Matrix Spike (MS) Recoveries							
EP035G: Total Phenol by Discrete Analyser	ES1830700--001	Anonymous	**Phenols (Total)**	----	55.5 %	70-130%	**Recovery less than lower data quality objective**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	ES1830703--002	SRT-BH414_0.4	**Pyrene**	129-00-0	22.0 %	70-130%	**Recovery less than lower data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Total Mercury by FIMS	3	36	8.33	10.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	4	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	7	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	4	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	7	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)							
SRT-BH419_0.5, SRT-BH423_2.0	**13-Oct-2018**	**18-Oct-2018**	20-Oct-2018	✓	**18-Oct-2018**	18-Oct-2018	✓
EA029-A: pH Measurements							
Snap Lock Bag - frozen (EA029)							
SRT_BH423_3.0, SRT_BH423_4.15	**13-Oct-2018**	**22-Oct-2018**	08-Jul-2021	✓	**22-Oct-2018**	20-Jan-2019	✓
EA029-B: Acidity Trail							
Snap Lock Bag - frozen (EA029)							
SRT_BH423_3.0, SRT_BH423_4.15	**13-Oct-2018**	**22-Oct-2018**	08-Jul-2021	✓	**22-Oct-2018**	20-Jan-2019	✓
EA029-C: Sulfur Trail							
Snap Lock Bag - frozen (EA029)							
SRT_BH423_3.0, SRT_BH423_4.15	**13-Oct-2018**	**22-Oct-2018**	08-Jul-2021	✓	**22-Oct-2018**	20-Jan-2019	✓
EA029-D: Calcium Values							
Snap Lock Bag - frozen (EA029)							
SRT_BH423_3.0, SRT_BH423_4.15	**13-Oct-2018**	**22-Oct-2018**	08-Jul-2021	✓	**22-Oct-2018**	20-Jan-2019	✓
EA029-E: Magnesium Values							
Snap Lock Bag - frozen (EA029)							
SRT_BH423_3.0, SRT_BH423_4.15	**13-Oct-2018**	**22-Oct-2018**	08-Jul-2021	✓	**22-Oct-2018**	20-Jan-2019	✓
EA029-F: Excess Acid Neutralising Capacity							
Snap Lock Bag - frozen (EA029)							
SRT_BH423_3.0, SRT_BH423_4.15	**13-Oct-2018**	**22-Oct-2018**	08-Jul-2021	✓	**22-Oct-2018**	20-Jan-2019	✓
EA029-G: Retained Acidity							
Snap Lock Bag - frozen (EA029)							
SRT_BH423_3.0, SRT_BH423_4.15	**13-Oct-2018**	**22-Oct-2018**	08-Jul-2021	✓	**22-Oct-2018**	20-Jan-2019	✓
EA029-H: Acid Base Accounting							
Snap Lock Bag - frozen (EA029)							
SRT_BH423_3.0, SRT_BH423_4.15	**13-Oct-2018**	**22-Oct-2018**	08-Jul-2021	✓	**22-Oct-2018**	20-Jan-2019	✓
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
SRT-BH414_0.4, SRT-BH419_0.25, SRT-BH419_1.0, SRT-BH423_0.5, SRT-BH423_2.0, SRT_BH423_4.15, SRT_BH425_0.15, SRT_QCA104	**13-Oct-2018**	**----**	----	----	**18-Oct-2018**	27-Oct-2018	✓

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
EA150: Soil Classification based on Particle Size							
Snap Lock Bag (EA150H)							
SRT-BH423_2.0	**13-Oct-2018**	**----**	----	----	**23-Oct-2018**	11-Apr-2019	✓
Snap Lock Bag: Separate bag received (EA150H)							
SRT-BH419_0.5	**13-Oct-2018**	**----**	----	----	**23-Oct-2018**	11-Apr-2019	✓
EA152: Soil Particle Density							
Snap Lock Bag (EA152)							
SRT-BH423_2.0	**13-Oct-2018**	**----**	----	----	**23-Oct-2018**	11-Apr-2019	✓
Snap Lock Bag: Separate bag received (EA152)							
SRT-BH419_0.5	**13-Oct-2018**	**----**	----	----	**23-Oct-2018**	11-Apr-2019	✓
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag: Separate bag received (EA200)							
SRT-BH414_0.4, SRT-BH419_1.0, SRT-BH423_0.5, SRT_BH425_0.15	**13-Oct-2018**	**----**	----	----	**18-Oct-2018**	11-Apr-2019	✓
EA200N: Asbestos Quantification (non-NATA)							
Snap Lock Bag: Separate bag received (EA200N)							
SRT-BH414_0.4, SRT-BH419_1.0, SRT-BH423_0.5, SRT_BH425_0.15	**13-Oct-2018**	**----**	----	----	**18-Oct-2018**	11-Apr-2019	✓
ED006: Exchangeable Cations on Alkaline Soils							
Soil Glass Jar - Unpreserved (ED006)							
SRT-BH419_0.5, SRT-BH423_2.0	**13-Oct-2018**	**22-Oct-2018**	10-Nov-2018	✓	**22-Oct-2018**	10-Nov-2018	✓
ED008: Exchangeable Cations							
Soil Glass Jar - Unpreserved (ED008)							
SRT-BH419_0.5, SRT-BH423_2.0	**13-Oct-2018**	**22-Oct-2018**	10-Nov-2018	✓	**22-Oct-2018**	10-Nov-2018	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
SRT-BH414_0.4, SRT-BH419_0.25, SRT-BH419_1.0, SRT-BH423_0.5, SRT-BH423_2.0, SRT_BH423_4.15, SRT_BH425_0.15, SRT_QCA104	**13-Oct-2018**	**19-Oct-2018**	11-Apr-2019	✓	**19-Oct-2018**	11-Apr-2019	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
SRT-BH414_0.4, SRT-BH419_0.25, SRT-BH419_1.0, SRT-BH423_0.5, SRT-BH423_2.0, SRT_BH423_4.15, SRT_BH425_0.15, SRT_QCA104	**13-Oct-2018**	**19-Oct-2018**	10-Nov-2018	✓	**22-Oct-2018**	10-Nov-2018	✓
EP035G: Total Phenol by Discrete Analyser							
Soil Glass Jar - Unpreserved (EP035G)							
SRT-BH414_0.4, SRT-BH419_1.0, SRT-BH423_0.5	**13-Oct-2018**	**22-Oct-2018**	27-Oct-2018	✓	**22-Oct-2018**	27-Oct-2018	✓

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
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066)							
SRT-BH414_0.4, SRT-BH419_0.25, SRT-BH419_1.0, SRT-BH423_0.5	**13-Oct-2018**	**17-Oct-2018**	27-Oct-2018	✓	**18-Oct-2018**	26-Nov-2018	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
SRT-BH414_0.4, SRT-BH419_0.25, SRT-BH419_1.0, SRT-BH423_0.5	**13-Oct-2018**	**17-Oct-2018**	27-Oct-2018	✓	**18-Oct-2018**	26-Nov-2018	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068)							
SRT-BH414_0.4, SRT-BH419_0.25, SRT-BH419_1.0, SRT-BH423_0.5	**13-Oct-2018**	**17-Oct-2018**	27-Oct-2018	✓	**18-Oct-2018**	26-Nov-2018	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP074)							
SRT-BH414_0.4, SRT-BH419_1.0, SRT-BH423_0.5, SRT_BH423_4.15, SRT_QCA104	**13-Oct-2018**	**17-Oct-2018**	20-Oct-2018	✓	**18-Oct-2018**	20-Oct-2018	✓
EP074B: Oxygenated Compounds							
Soil Glass Jar - Unpreserved (EP074)							
SRT-BH414_0.4, SRT-BH419_1.0, SRT-BH423_0.5, SRT_BH423_4.15, SRT_QCA104	**13-Oct-2018**	**17-Oct-2018**	20-Oct-2018	✓	**18-Oct-2018**	20-Oct-2018	✓
EP074C: Sulfonated Compounds							
Soil Glass Jar - Unpreserved (EP074)							
SRT-BH414_0.4, SRT-BH419_1.0, SRT-BH423_0.5, SRT_BH423_4.15, SRT_QCA104	**13-Oct-2018**	**17-Oct-2018**	20-Oct-2018	✓	**18-Oct-2018**	20-Oct-2018	✓
EP074D: Fumigants							
Soil Glass Jar - Unpreserved (EP074)							
SRT-BH414_0.4, SRT-BH419_1.0, SRT-BH423_0.5, SRT_BH423_4.15, SRT_QCA104	**13-Oct-2018**	**17-Oct-2018**	20-Oct-2018	✓	**18-Oct-2018**	20-Oct-2018	✓
EP074E: Halogenated Aliphatic Compounds							
Soil Glass Jar - Unpreserved (EP074)							
SRT-BH414_0.4, SRT-BH419_1.0, SRT-BH423_0.5, SRT_BH423_4.15, SRT_QCA104	**13-Oct-2018**	**17-Oct-2018**	20-Oct-2018	✓	**18-Oct-2018**	20-Oct-2018	✓
EP074F: Halogenated Aromatic Compounds							
Soil Glass Jar - Unpreserved (EP074)							
SRT-BH414_0.4, SRT-BH419_1.0, SRT-BH423_0.5, SRT_BH423_4.15, SRT_QCA104	**13-Oct-2018**	**17-Oct-2018**	20-Oct-2018	✓	**18-Oct-2018**	20-Oct-2018	✓

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
EP074G: Trihalomethanes							
Soil Glass Jar - Unpreserved (EP074)							
SRT-BH414_0.4, SRT-BH419_1.0, SRT-BH423_0.5, SRT_BH423_4.15, SRT_QCA104	**13-Oct-2018**	**17-Oct-2018**	20-Oct-2018	✓	**18-Oct-2018**	20-Oct-2018	✓
EP074H: Naphthalene							
Soil Glass Jar - Unpreserved (EP074)							
SRT-BH414_0.4, SRT-BH419_1.0, SRT-BH423_0.5, SRT_BH423_4.15, SRT_QCA104	**13-Oct-2018**	**17-Oct-2018**	20-Oct-2018	✓	**18-Oct-2018**	20-Oct-2018	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
SRT-BH414_0.4, SRT-BH419_0.25, SRT-BH419_1.0, SRT-BH423_0.5, SRT-BH423_2.0, SRT_BH423_4.15, SRT_BH425_0.15, SRT_QCA104	**13-Oct-2018**	**17-Oct-2018**	27-Oct-2018	✓	**18-Oct-2018**	26-Nov-2018	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
Trip spike 104, Trip Spike Control	**08-Oct-2018**	**17-Oct-2018**	22-Oct-2018	✓	**18-Oct-2018**	22-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080)							
Trip Blank 104	**12-Oct-2018**	**17-Oct-2018**	26-Oct-2018	✓	**18-Oct-2018**	26-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080)							
SRT-BH414_0.4, SRT-BH419_0.25, SRT-BH419_1.0, SRT-BH423_0.5, SRT-BH423_2.0, SRT_BH423_4.15, SRT_BH425_0.15, SRT_QCA104	**13-Oct-2018**	**17-Oct-2018**	27-Oct-2018	✓	**18-Oct-2018**	27-Oct-2018	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
Trip spike 104, Trip Spike Control	**08-Oct-2018**	**17-Oct-2018**	22-Oct-2018	✓	**18-Oct-2018**	22-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080)							
Trip Blank 104	**12-Oct-2018**	**17-Oct-2018**	26-Oct-2018	✓	**18-Oct-2018**	26-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080)							
SRT-BH414_0.4, SRT-BH419_0.25, SRT-BH419_1.0, SRT-BH423_0.5, SRT-BH423_2.0, SRT_BH423_4.15, SRT_BH425_0.15, SRT_QCA104	**13-Oct-2018**	**17-Oct-2018**	27-Oct-2018	✓	**18-Oct-2018**	27-Oct-2018	✓

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
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080)								
Trip spike 104,	Trip Spike Control	**08-Oct-2018**	**17-Oct-2018**	22-Oct-2018	✓	**18-Oct-2018**	22-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080)								
Trip Blank 104		**12-Oct-2018**	**17-Oct-2018**	26-Oct-2018	✓	**18-Oct-2018**	26-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080)								
SRT-BH414_0.4,	SRT-BH419_0.25,	**13-Oct-2018**	**17-Oct-2018**	27-Oct-2018	✓	**18-Oct-2018**	27-Oct-2018	✓
SRT-BH419_1.0,	SRT-BH423_0.5,							
SRT-BH423_2.0,	SRT_BH423_4.15,							
SRT_BH425_0.15,	SRT_QCA104							

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
RB104	**13-Oct-2018**	**19-Oct-2018**	11-Apr-2019	✓	**19-Oct-2018**	11-Apr-2019	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
RB105	**14-Oct-2018**	**19-Oct-2018**	12-Apr-2019	✓	**19-Oct-2018**	12-Apr-2019	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
RB104	**13-Oct-2018**	**----**	----	----	**17-Oct-2018**	10-Nov-2018	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
RB105	**14-Oct-2018**	**----**	----	----	**17-Oct-2018**	11-Nov-2018	✓
EP066: Polychlorinated Biphenyls (PCB)							
Amber Glass Bottle - Unpreserved (EP066)							
RB104	**13-Oct-2018**	**18-Oct-2018**	20-Oct-2018	✓	**18-Oct-2018**	27-Nov-2018	✓
Amber Glass Bottle - Unpreserved (EP066)							
RB105	**14-Oct-2018**	**18-Oct-2018**	21-Oct-2018	✓	**18-Oct-2018**	27-Nov-2018	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068)							
RB104	**13-Oct-2018**	**18-Oct-2018**	20-Oct-2018	✓	**18-Oct-2018**	27-Nov-2018	✓
Amber Glass Bottle - Unpreserved (EP068)							
RB105	**14-Oct-2018**	**18-Oct-2018**	21-Oct-2018	✓	**18-Oct-2018**	27-Nov-2018	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068)							
RB104	**13-Oct-2018**	**18-Oct-2018**	20-Oct-2018	✓	**18-Oct-2018**	27-Nov-2018	✓
Amber Glass Bottle - Unpreserved (EP068)							
RB105	**14-Oct-2018**	**18-Oct-2018**	21-Oct-2018	✓	**18-Oct-2018**	27-Nov-2018	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) RB104	**13-Oct-2018**	**18-Oct-2018**	20-Oct-2018	✓	**18-Oct-2018**	27-Nov-2018	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) RB105	**14-Oct-2018**	**18-Oct-2018**	21-Oct-2018	✓	**18-Oct-2018**	27-Nov-2018	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) RB104	**13-Oct-2018**	**18-Oct-2018**	20-Oct-2018	✓	**18-Oct-2018**	27-Nov-2018	✓
Amber Glass Bottle - Unpreserved (EP071) RB105	**14-Oct-2018**	**18-Oct-2018**	21-Oct-2018	✓	**18-Oct-2018**	27-Nov-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB104	**13-Oct-2018**	**18-Oct-2018**	27-Oct-2018	✓	**18-Oct-2018**	27-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB105	**14-Oct-2018**	**18-Oct-2018**	28-Oct-2018	✓	**18-Oct-2018**	28-Oct-2018	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) RB104	**13-Oct-2018**	**18-Oct-2018**	20-Oct-2018	✓	**18-Oct-2018**	27-Nov-2018	✓
Amber Glass Bottle - Unpreserved (EP071) RB105	**14-Oct-2018**	**18-Oct-2018**	21-Oct-2018	✓	**18-Oct-2018**	27-Nov-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB104	**13-Oct-2018**	**18-Oct-2018**	27-Oct-2018	✓	**18-Oct-2018**	27-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB105	**14-Oct-2018**	**18-Oct-2018**	28-Oct-2018	✓	**18-Oct-2018**	28-Oct-2018	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) RB104	**13-Oct-2018**	**18-Oct-2018**	27-Oct-2018	✓	**18-Oct-2018**	27-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB105	**14-Oct-2018**	**18-Oct-2018**	28-Oct-2018	✓	**18-Oct-2018**	28-Oct-2018	✓

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)							
Exchangeable Cations on Alkaline Soils	ED006	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	8	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH (1:5)	EA002	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	4	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	36	**8.33**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	4	37	**10.81**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	2	6	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	8	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	21	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Exchangeable Cations on Alkaline Soils	ED006	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	37	**5.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	21	**9.52**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Exchangeable Cations on Alkaline Soils	ED006	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	37	**5.41**	**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		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Total Phenol By Discrete Analyser	EP035G	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	21	**9.52**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	37	**5.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	21	**9.52**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	7	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	4	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	2	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	7	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
TRH - Semivolatile Fraction	EP071	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	7	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	4	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	2	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	7	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
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 (2013) Schedule B(3)
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	SOIL	In house: Referenced to Ahern et al 2004 - a suspension peroxide oxidation method following the 'sulfur trail' by determining the level of 1M KCL extractable sulfur and the sulfur level after oxidation of soil sulphides. The 'acidity trail' is followed by measurement of TAA, TPA and TSA. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5.
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Particle Size Analysis by Hydrometer	EA150H	SOIL	Particle Size Analysis by Hydrometer according to AS1289.3.6.3 - 2003
Soil Particle Density	* EA152	SOIL	Soil Particle Density by AS 1289.3.5.1-2006 : Methods of testing soils for engineering purposes - Soil classification tests - Determination of the soil particle density of a soil - Standard method
Asbestos Identification in Soils	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Asbestos Classification and Quantitation per NEPM 2013	* EA200N	SOIL	Asbestos Classification and Quantitation per NEPM 2013 with Confirmation of Identification by AS 4964 - 2004 Gravimetric determination of Asbestos Containing Material, Fibrous Asbestos, Asbestos Fines and sample weight and calculation of percentage concentrations per NEPM protocols. Asbestos (Fines and Fibrous FA+AF) is reported as the equivalent weight in the sample received after accounting for sub-sampling (where applicable for the <7mm and/or <2mm fractions).
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 with pre-treatment	ED008	SOIL	In house: Referenced to Rayment & Higginson (2011) 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 (2013) Schedule B(3) (Method 301)
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, 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 (2013) Schedule B(3)
Total Phenol By Discrete Analyser	EP035G	SOIL	In house: Referenced to APHA 5530 B&D Steam distillable Phenols are reacted with 4-aminoantipyrine. The resultant colour intensity is measured by Seal

Analytical Methods	Method	Matrix	Method Descriptions
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270D 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 (2013) Schedule B(3) (Method 504)
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270D 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 (2013) Schedule B(3) (Method 504,505)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM amended 2013.
Volatile Organic Compounds	EP074	SOIL	In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 501)
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D. 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 (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM amended 2013.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The 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 (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample 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 (2013) Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample 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 (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A 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 the QC requirements of NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method (Alkaline Soils)	ED006PR	SOIL	In house: Referenced to Rayment and Lyons 2011 method 15C1.
Exchangeable Cations Preparation Method	ED007PR	SOIL	In house: Referenced to Rayment & Higginson (1992) 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.
Drying at 85 degrees, bagging and labelling (ASS)	EN020PR	SOIL	In house
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 (2013) Schedule B(3) (Method 202)
Phenols After Microdistillation	EP035D	SOIL	In house: Referenced to APHA 5530 A, B&D. pH adjusted Steam distillable Phenolic compounds. The resultant colour intensity is measured by Discrete Analyser.
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.
Digestion for Total Recoverable Metals	EN25	WATER	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 (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
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F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: 1791865 – SM TSE

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

Additional Report Formats
NEPM
CSV
ESDAT
DQO
GO, Guidelines --------
Others _____

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other____	NO. OF CONTAINERS	ANALYSIS REQUESTED: HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)		EA200N (asbestos NEPM)	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)	Notes/Guidelines/LOR/ Special instructions
1	SRT-BH415-0.2	20/10/18	X			2	X													
2	SRT-BH415-0.5	20/10/18	X			2			X	X	X	X	X		X					
3	SRT-BH415-1.0	20/10/18	X			3	X													
4	SRT-BH415-1.5	20/10/18	X			1 (jar)	X													
5	SRT-BH415-2.0	20/10/18	X			2	X	X												
6	SRT-BH415-3.0	20/10/18	X			2	X	X												
7	SRT-BH415-4.0	20/10/18	X			2	X										X			
8	SRT-BH415-5.0	20/10/18	X			2	X	X												
9	SRT-BH415-5.1	20/10/18	X			1 (jar)	X													
10	SRT-BH419-1.05	20/10/18	X			2			X	X	X	X	X		X					
11	SRT-BH419-1.6	20/10/18	X			2	X													
12	SRT-BH419-2.0	20/10/18	X			2	X	X												
13	SRT-BH419-3.0	20/10/18	X			2	X										X			

Subcon / Forward Lab / Split WO
Lab / Analysis: SPOCAS → Brisbane
Organised By / Date: Asbestos →
Relinquished By / Date: Newcastle
Connote / Courier:
WO No:
Attach By

Environmental Division
Sydney
Work Order Reference
ES1831696
Telephone : +61-2-8784 8555

Relinquished By:	Date/Time:	Received By: [signature] AS.	Date/Time: 24/10/18 15:20
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD

Uncontrolled template when printed

Up Date COC

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Lab ID Number:*(please quote on correspondence)*

Site: 1791865 – SM TSE

CHAIN OF CUSTODY & ANALYSIS REQUEST

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

Additional Report Formats
NEPM
CSV
ESDAT
DQO
GO, Guidelines ---------
Others _____

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other____	NO. OF CONTAINERS	ANALYSIS REQUESTED: HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)		EA200N (asbestos NEPM)	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	(TRH / BTEXN / PAH / 8 Metals, OCPs/OPPs/PCBs)	Notes/Guidelines/LOR/ Special instructions
14	SRT-BH419-4.0	20/10/18	X			2	X	X												
15	SRT-BH419-4.5	20/10/18	X			2	X	X												
16	SRT-BH419-7.0 SRT-BH419-72	20/10/18	X			2	X	X												
17	SRT-QCA106	20/10/18	X			1	X													
18	SRT-RB106	20/10/18		X		4	X												X	
19	SRT-TB106	20/10/18	X			1	X											X		
20	SRT-TS106	20/10/18	X			1	X											X		
21	TSC																			

Relinquished By:	Date/Time:	Received By: [signature]	Date/Time: 24/10/18 1520 3-2 C
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: Yes / *No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD

Fadi Soro

From: Sepan Mahamad
Sent: Wednesday, 24 October 2018 2:39 PM
To: Fadi Soro; Loren Schiavon
Subject: FW: COC for samples for project 1791865
Attachments: 1791865_COC_Primary Lab_Soil_COC04 (002).docx

Hi Loren and Fadi,

Please see attached CoC for samples from Golder delivered earlier this week.

Please note that my office hours are 11am - 5.30pm Monday to Friday. For assistance outside of this time please contact **ALSEnviro.Sydney@alsglobal.com**.

Kind Regards,

Sepan Mahamad

Client Services Officer, Environmental
Sydney

T +61 2 9437 9978
M +61 438 511 003
sepan.mahamad@alsglobal.com
Shop 2, 36 Hume St
Crows Nest NSW 2065 AUSTRALIA

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From: Doyle, Shane [mailto:SDoyle@golder.com.au]
Sent: Wednesday, 24 October 2018 13:04
To: ALSEnviro Sydney <ALSEnviro.Sydney@ALSGlobal.com>
Cc: Houston, Barry <bhouston@golder.com.au>; Bonetti, Rita <RBonetti@golder.com.au>
Subject: COC for samples for project 1791865

Attached is the COC for samples delivered earlier this week.

Please contact Barry Houston if you have any questions.

Regards

GOLDER **Shane Doyle (BSc[Chem], MSc[EnvTox], MRACI CChem)**
Principal Environmental Scientist

124 Pacific Highway, St. Leonards, New South Wales 2065, Australia (PO Box 1302, Crows Nest NSW 1585)
T: +61 2 9478 3900 | D: +61 2 9478 3917 | M: +61 412 068 218 | golder.com
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CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: 1791865 – SM TSE

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 / Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)		EA200N (asbestos NEPM)	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)	Notes/Guidelines/LOR/ Special instructions
	SRT-BH415-0.2	20/10/18	X			2	X													
	SRT-BH415-0.5	20/10/18	X			2	X													
	SRT-BH415-1.0	20/10/18	X			3	X													
	SRT-BH415-1.5	20/10/18	X			1 (jar)	X													
	SRT-BH415-2.0	20/10/18	X			2	X	X												
	SRT-BH415-3.0	20/10/18	X			2	X	X												
	SRT-BH415-4.0	20/10/18	X			2	X	X												
	SRT-BH415-5.0	20/10/18	X			2	X	X												
	SRT-BH415-5.1	20/10/18	X			1 (jar)	X													
	SRT-BH419-1.05	20/10/18	X			2	X													
	SRT-BH419-1.6	20/10/18	X			2	X													
	SRT-BH419-2.0	20/10/18	X			2	X	X												
	SRT-BH419-3.0	20/10/18	X			2	X	X												

ANALYSIS REQUESTED

Additional Report Formats

NEPM
CSV
ESDAT
DQO
GO, Guidelines --------
_____
Others _____

Relinquished By:	Date/Time: 23/10/18	Received By:	Date/Time: 23/10/18 1520 3-2
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: 1791865 – SM TSE

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate) Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)		EA200N (asbestos NEPM)	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	(TRH / BTEXN / PAH / 8 Metals, OCPs/OPPs/PCBs)	Additional Report Formats / Notes/Guidelines/LOR/ Special instructions
	SRT-BH419-4.0	20/10/18	X			2	X	X												
	SRT-BH419-4.5	20/10/18	X			2	X	X												
	SRT-BH419-7.0	20/10/18	X			2	X	X												
	SRT-QCA106	20/10/18	X			1	X													
	SRT-RB106	20/10/18		X		4	X													
	SRT-TB106	20/10/18	X			1	X													
	SRT-TS106	20/10/18	X			1	X													

Additional Report Formats: NEPM, CSV, ESDAT, DQO, GO, Guidelines ---------, Others _____

Relinquished By:	Date/Time: 23/10/18	Received By:	Date/Time: 23/10/18 1520
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD

Loren Schiavon

From: Sepan Mahamad
Sent: Friday, 2 November 2018 2:05 PM
To: Fadi Soro; Loren Schiavon; Edwandy Fadjar; Sanjeshni Jyoti
Cc: Barbara Hanna
Subject: ES1831696 Rebatch - holding time out tomorrow

Importance: High

Hi Fadi/Loren,

Can you please process this rebatch asap?

Lab team,

Please extract the sample today for SVOC. Sample was taken on 20/10, therefore, HT will be out tomorrow.

Please note that my office hours are 11am - 5.30pm Monday to Friday. For assistance outside of this time please contact **ALSEnviro.Sydney@alsglobal.com**.

Kind Regards,

Sepan Mahamad
Client Services Officer, Environmental Sydney

T +61 2 9437 9978
M +61 438 511 003
sepan.mahamad@alsglobal.com
Shop 2, 36 Hume St
Crows Nest NSW 2065 AUSTRALIA

Subscribe

Environmental Division Sydney
Work Order Reference
ES1831696

Telephone : +61-2-8784 8555



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From: Bonetti, Rita [mailto:RBonetti@golder.com.au]
Sent: Friday, 2 November 2018 13:15
To: ALSEnviro Sydney <ALSEnviro.Sydney@ALSGlobal.com>; Sepan Mahamad <Sepan.Mahamad@alsglobal.com>
Cc: Houston, Barry <bhouston@golder.com.au>
Subject: RE: RESULTS & EDD for ALS Workorder : ES1831696 | Your Reference: Sydney Metro
Importance: High

Good afternoon Sepan,

Could I please get sample SRT-QCA106 from batch ES1831696 analysed for the following:

- S-26: TRH, BTEX, metals and PAHs
- S-12: OCPs and OPPs
- EP074: VOCs
- EP066: PCBs
- EP035G: Phenols

The sample will exceed holding time for SVOCs and VOCs tomorrow, so could you please get the sample extracted today?

Thanks in advance!

Cheers,
Rita

Rita Bonetti (BEnvSC (Adv))
Environmental Scientist

GOLDER
Golder Associates Pty Ltd
124 Pacific Highway, St. Leonards, New South Wales 2065, Australia (PO Box 1302, Crows Nest NSW 1585)
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From: angel-no-reply@alsglobal.com <angel-no-reply@alsglobal.com>
Sent: Thursday, 1 November 2018 5:47 PM
To: Bonetti, Rita <RBonetti@golder.com.au>
Subject: RESULTS & EDD for ALS Workorder : ES1831696 | Your Reference: Sydney Metro

ALS Environmental

Deliverables for ALS Workorder ES1831696

Project: Sydney Metro

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **ES1831696**		
Amendment	: **1**		
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: RBonetti@golder.com.au	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9478 3901	Facsimile	: +61-2-8784 8500
Project	: Sydney Metro	Page	: 1 of 3
Order number	: .	Quote number	: ES2017GOLASS0019 (SY/698/17 C V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: 1791865-SM TSE		
Sampler	:		

Dates

Date Samples Received	: 24-Oct-2018 15:20	Issue Date	: 02-Nov-2018
Client Requested Due Date	: 08-Nov-2018	Scheduled Reporting Date	: **08-Nov-2018**

Delivery Details

Mode of Delivery	: Pickup	Security Seal	: Intact.
No. of coolers/boxes	: 2	Temperature	: 3.2 - Ice present
Receipt Detail	:	No. of samples received / analysed	: 21 / 9

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
- 26/10/18: This is an updated SRN which indicates that asbestos analysis will be conducted by ALS Melbourne. Preliminary results will be available on the scheduled reporting date listed in this report. However the final report with asbestos analysis will be complete on 05/11/18.
- This is an updated SRN which indicates the new scheduled release date for this work order.
- **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 absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- SPOCAS analysis to be conducted by ALS Brisbane.
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.

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	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP035G (solids) Total Phenol by Discrete Analyser	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - S-12 OC/OP Pesticides	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES1831696-001	20-Oct-2018 00:00	SRT-BH415-0.2	✓						
ES1831696-002	20-Oct-2018 00:00	SRT-BH415-0.5		✓	✓	✓	✓	✓	✓
ES1831696-003	20-Oct-2018 00:00	SRT-BH415-1.0	✓						
ES1831696-004	20-Oct-2018 00:00	SRT-BH415-1.5	✓						
ES1831696-005	20-Oct-2018 00:00	SRT-BH415-2.0	✓						
ES1831696-006	20-Oct-2018 00:00	SRT-BH4153.0	✓						
ES1831696-008	20-Oct-2018 00:00	SRT-BH415-5.0	✓						
ES1831696-009	20-Oct-2018 00:00	SRT-BH415-5.1	✓						
ES1831696-010	20-Oct-2018 00:00	SRT-BH419-1.05		✓	✓	✓	✓	✓	✓
ES1831696-011	20-Oct-2018 00:00	SRT-BH419-1.6	✓						
ES1831696-012	20-Oct-2018 00:00	SRT-BH419-2.0	✓						
ES1831696-014	20-Oct-2018 00:00	SRT-BH419-4.0	✓						
ES1831696-015	20-Oct-2018 00:00	SRT-BH419-4.5	✓						
ES1831696-016	20-Oct-2018 00:00	SRT-BH419-7.0	✓						
ES1831696-017	20-Oct-2018 00:00	SRT-QCA106		✓	✓	✓	✓	✓	✓

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA029 SPOCAS	SOIL - EA200N Asbestos in Soils - (<1kg samples ONLY)	SOIL - S-18 TRH(C6-C9)/BTEXN
ES1831696-002	20-Oct-2018 00:00	SRT-BH415-0.5		✓	
ES1831696-007	20-Oct-2018 00:00	SRT-BH415-4.0	✓		
ES1831696-010	20-Oct-2018 00:00	SRT-BH419-1.05		✓	
ES1831696-013	20-Oct-2018 00:00	SRT-BH419-3.0	✓		
ES1831696-019	15-Oct-2018 00:00	SRT-TB106			✓
ES1831696-020	15-Oct-2018 00:00	SRT-TS106			✓
ES1831696-021	15-Oct-2018 00:00	Trip Spike Control			✓

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - W-16T TRH/BTEXN/PAH/OC/OP/PCB/8 Total metals
ES1831696-018	20-Oct-2018 00:00	SRT-RB106	✓

Proactive Holding Time Report

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

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	au_accountspayable@golder.com.au

BARRY HOUSTON

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

RITA BONETTI

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

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1831696**	Page	: 1 of 18
Amendment	: **1**		
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 24-Oct-2018 15:20
Order number	: .	Date Analysis Commenced	: 26-Oct-2018
C-O-C number	: ----	Issue Date	: 07-Nov-2018 16:01
Sampler	: ----		
Site	: 1791865-SM TSE		
Quote number	: SY/698/17 C V4		
No. of samples received	: 21		
No. of samples analysed	: 9		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive 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*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Emily Daos	Team Leader - Asbestos	Melbourne Asbestos, Springvale, VIC
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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.

- ASS: EA029 (SPOCAS): Retained Acidity not required because pH KCl greater than or equal to 4.5
- Amendment (02/11/2018): This report has been amended and re-released to allow the reporting of additional analytical data.
- ASS: EA029 (SPOCAS): Excess ANC not required because pH OX less than 6.5.
- EP080: The trip spike and its control have been analysed for volatile TPH and BTEX only. The trip spike and control were prepared in the lab using reagent grade sand spiked with petrol. The spike was dispatched from the lab and the control retained.
- EA200N: Asbestos weights and percentages are not covered under the Scope of NATA Accreditation.
  Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present)
  The Asbestos (Fines and Fibrous) weight is calculated from the extracted Fibrous Asbestos and Asbestos Fines as an equivalent weight of 100% Asbestos
  Percentages for Asbestos content in ACM are based on the 2013 NEPM default values.
  All calculations of percentage Asbestos under this method are approximate and should be used as a guide only.
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime ($CaCO_3$) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m3 in-situ soil, multiply reported results x wet bulk density of soil in t/m3.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.
- EA200N: ALS laboratory procedures and methods used for the identification and quantitation of asbestos are consistent with AS4964-2004 and the requirements of the 2013 NEPM for Assessment of Site Contamination
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
  Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH415-0.5	SRT-BH415-4.0	SRT-BH419-1.05	SRT-BH419-3.0	SRT-QCA106
			Client sampling date / time	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1831696-002	ES1831696-007	ES1831696-010	ES1831696-013	ES1831696-017
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	----	**6.0**	----	**5.7**	----
pH OX (23B)	----	0.1	pH Unit	----	**5.0**	----	**4.1**	----
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	<2	----	<2	----
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	**8**	----	**7**	----
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	**8**	----	**7**	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	<0.020	----	<0.020	----
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	<0.020	----	<0.020	----
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	<0.020	----	<0.020	----
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	<0.020	----	<0.020	----
Peroxide Sulfur (23De)	----	0.020	% S	----	<0.020	----	<0.020	----
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	<0.020	----	<0.020	----
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	<10	----	<10	----
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	<0.020	----	<0.020	----
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	<0.020	----	<0.020	----
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	<0.020	----	<0.020	----
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	<10	----	<10	----
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	<0.020	----	<0.020	----
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	<0.020	----	<0.020	----
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	<0.020	----	<0.020	----
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	<0.020	----	<0.020	----
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	<10	----	<10	----
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	<0.020	----	<0.020	----
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	**1.5**	----	**1.5**	----
Net Acidity (sulfur units)	----	0.02	% S	----	<0.02	----	<0.02	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	<10	----	<10	----
Liming Rate	----	1	kg CaCO3/t	----	<1	----	<1	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH415-0.5	SRT-BH415-4.0	SRT-BH419-1.05	SRT-BH419-3.0	SRT-QCA106
				Client sampling date / time	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1831696-002	ES1831696-007	ES1831696-010	ES1831696-013	ES1831696-017
					Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued									
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		----	<0.02	----	<0.02	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		----	<10	----	<10	----
Liming Rate excluding ANC	----	1	kg CaCO3/t		----	<1	----	<1	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		8.8	----	17.6	----	8.9
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		No	----	No	----	----
Asbestos (Trace)	1332-21-4	5	Fibres		No	----	No	----	----
Asbestos Type	1332-21-4	-	--		-	----	-	----	----
Sample weight (dry)	----	0.01	g		520	----	557	----	----
APPROVED IDENTIFIER:	----	-	--		E.DAOS	----	E.DAOS	----	----
EA200N: Asbestos Quantification (non-NATA)									
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g		<0.0004	----	<0.0004	----	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		<0.001	----	<0.001	----	----
ø Asbestos Containing Material	1332-21-4	0.1	g		<0.1	----	<0.1	----	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)		<0.01	----	<0.01	----	----
ø Weight Used for % Calculation	----	0.0001	kg		0.520	----	0.557	----	----
ø Fibrous Asbestos >7mm	----	0.0004	g		<0.0004	----	<0.0004	----	----
EG005T: Total Metals by ICP-AES									
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		7	----	7	----	7
Copper	7440-50-8	5	mg/kg		<5	----	27	----	<5
Lead	7439-92-1	5	mg/kg		16	----	64	----	14
Nickel	7440-02-0	2	mg/kg		3	----	3	----	3
Zinc	7440-66-6	5	mg/kg		20	----	91	----	21
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	<0.1	----	<0.1
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	1	mg/kg		<1	----	<1	----	<1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	----	<0.1	----	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH415-0.5	SRT-BH415-4.0	SRT-BH419-1.05	SRT-BH419-3.0	SRT-QCA106
				Client sampling date / time	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1831696-002	ES1831696-007	ES1831696-010	ES1831696-013	ES1831696-017
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
^ **Total Chlordane (sum)**	----	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	----	<0.05	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH415-0.5	SRT-BH415-4.0	SRT-BH419-1.05	SRT-BH419-3.0	SRT-QCA106
				Client sampling date / time	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1831696-002	ES1831696-007	ES1831696-010	ES1831696-013	ES1831696-017
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Styrene	100-42-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		<5	----	<5	----	<5
2-Butanone (MEK)	78-93-3	5	mg/kg		<5	----	<5	----	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		<5	----	<5	----	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg		<5	----	<5	----	<5
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
EP074D: Fumigants									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH415-0.5	SRT-BH415-4.0	SRT-BH419-1.05	SRT-BH419-3.0	SRT-QCA106
			Client sampling date / time	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1831696-002	ES1831696-007	ES1831696-010	ES1831696-013	ES1831696-017
				Result	Result	Result	Result	Result
EP074D: Fumigants - Continued								
2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	----	<5	----	<5
Chloromethane	74-87-3	5	mg/kg	<5	----	<5	----	<5
Vinyl chloride	75-01-4	5	mg/kg	<5	----	<5	----	<5
Bromomethane	74-83-9	5	mg/kg	<5	----	<5	----	<5
Chloroethane	75-00-3	5	mg/kg	<5	----	<5	----	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	----	<5	----	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Iodomethane	74-88-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH415-0.5	SRT-BH415-4.0	SRT-BH419-1.05	SRT-BH419-3.0	SRT-QCA106
			Client sampling date / time	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1831696-002	ES1831696-007	ES1831696-010	ES1831696-013	ES1831696-017
				Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
EP074G: Trihalomethanes								
Chloroform	67-66-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Bromoform	75-25-2	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	<1	----	<1	----	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	**0.6**	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	**8.5**	----	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	**1.9**	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	**8.7**	----	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	**7.4**	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	**3.0**	----	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	**2.6**	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	**2.8**	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	**1.2**	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	**2.5**	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	**1.0**	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	**1.2**	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	**41.4**	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH415-0.5	SRT-BH415-4.0	SRT-BH419-1.05	SRT-BH419-3.0	SRT-QCA106
				Client sampling date / time	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1831696-002	ES1831696-007	ES1831696-010	ES1831696-013	ES1831696-017
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	**3.3**	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	**3.6**	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	**3.8**	----	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg		<50	----	<50	----	<50
C15 - C28 Fraction	----	100	mg/kg		<100	----	<100	----	<100
C29 - C36 Fraction	----	100	mg/kg		<100	----	<100	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	<50	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	<10	----	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	----	<50	----	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	----	<100	----	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	----	<100	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	<50	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	<50	----	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	----	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**115**	----	**98.7**	----	**76.3**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**116**	----	**102**	----	**93.0**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**98.7**	----	**115**	----	**71.4**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH415-0.5	SRT-BH415-4.0	SRT-BH419-1.05	SRT-BH419-3.0	SRT-QCA106
				Client sampling date / time	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1831696-002	ES1831696-007	ES1831696-010	ES1831696-013	ES1831696-017
					Result	Result	Result	Result	Result
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		86.5	----	80.3	----	87.6
Toluene-D8	2037-26-5	0.5	%		99.9	----	85.4	----	86.9
4-Bromofluorobenzene	460-00-4	0.5	%		96.6	----	85.9	----	83.9
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		76.4	----	69.6	----	67.2
2-Chlorophenol-D4	93951-73-6	0.5	%		82.6	----	75.5	----	71.6
2.4.6-Tribromophenol	118-79-6	0.5	%		60.0	----	61.0	----	51.8
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		92.3	----	83.1	----	79.8
Anthracene-d10	1719-06-8	0.5	%		95.2	----	83.5	----	81.3
4-Terphenyl-d14	1718-51-0	0.5	%		85.0	----	75.0	----	72.2
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		89.9	----	80.9	----	89.6
Toluene-D8	2037-26-5	0.2	%		98.3	----	83.8	----	89.6
4-Bromofluorobenzene	460-00-4	0.2	%		96.2	----	86.8	----	87.4

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-TB106	SRT-TS106	Trip Spike Control	----	----
			Client sampling date / time	15-Oct-2018 00:00	15-Oct-2018 00:00	15-Oct-2018 00:00	----	----
Compound	CAS Number	LOR	Unit	ES1831696-019	ES1831696-020	ES1831696-021	--------	--------
				Result	Result	Result	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	**17**	**31**	**----**	**----**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	**23**	**40**	**----**	**----**
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg	<10	**11**	**18**	**----**	**----**
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	**----**	**----**
Toluene	108-88-3	0.5	mg/kg	<0.5	**4.2**	**8.9**	**----**	**----**
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	**0.8**	**1.5**	**----**	**----**
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	**4.6**	**7.7**	**----**	**----**
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	**2.4**	**3.5**	**----**	**----**
^ **Sum of BTEX**	----	0.2	mg/kg	<0.2	**12.0**	**21.6**	**----**	**----**
^ **Total Xylenes**	----	0.5	mg/kg	<0.5	**7.0**	**11.2**	**----**	**----**
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	**----**	**----**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**91.3**	**84.4**	**94.7**	**----**	**----**
Toluene-D8	2037-26-5	0.2	%	**85.8**	**82.8**	**91.0**	**----**	**----**
4-Bromofluorobenzene	460-00-4	0.2	%	**90.7**	**85.8**	**90.0**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-RB106	----	----	----	----
				Client sampling date / time	20-Oct-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1831696-018	--------	--------	--------	--------
					Result	----	----	----	----
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
^ **Total Polychlorinated biphenyls**	----	1	µg/L		<1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L		<0.5	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L		<0.5	----	----	----	----
beta-BHC	319-85-7	0.5	µg/L		<0.5	----	----	----	----
gamma-BHC	58-89-9	0.5	µg/L		<0.5	----	----	----	----
delta-BHC	319-86-8	0.5	µg/L		<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L		<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L		<0.5	----	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L		<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L		<0.5	----	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L		<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L		<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L		<0.5	----	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L		<0.5	----	----	----	----
Endrin	72-20-8	0.5	µg/L		<0.5	----	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L		<0.5	----	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L		<0.5	----	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L		<0.5	----	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L		<0.5	----	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L		<2.0	----	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L		<0.5	----	----	----	----
Methoxychlor	72-43-5	2.0	µg/L		<2.0	----	----	----	----
^ **Total Chlordane (sum)**	----	0.5	µg/L		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-RB106	----	----	----	----
				Client sampling date / time	20-Oct-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1831696-018	--------	--------	--------	--------
					Result	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L		<0.5	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L		<0.5	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L		<0.5	----	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L		<0.5	----	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L		<2.0	----	----	----	----
Dimethoate	60-51-5	0.5	µg/L		<0.5	----	----	----	----
Diazinon	333-41-5	0.5	µg/L		<0.5	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L		<0.5	----	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L		<2.0	----	----	----	----
Malathion	121-75-5	0.5	µg/L		<0.5	----	----	----	----
Fenthion	55-38-9	0.5	µg/L		<0.5	----	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L		<0.5	----	----	----	----
Parathion	56-38-2	2.0	µg/L		<2.0	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L		<0.5	----	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L		<0.5	----	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L		<0.5	----	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L		<0.5	----	----	----	----
Prothiofos	34643-46-4	0.5	µg/L		<0.5	----	----	----	----
Ethion	563-12-2	0.5	µg/L		<0.5	----	----	----	----
Carbophenothion	786-19-6	0.5	µg/L		<0.5	----	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L		<0.5	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-RB106	----	----	----	----
				Client sampling date / time	20-Oct-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1831696-018	--------	--------	--------	--------
					Result	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
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	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>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	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ Total Xylenes	----	2	µg/L		<2	----	----	----	----
^ Sum of BTEX	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		73.1	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-RB106	----	----	----	----
				Client sampling date / time	20-Oct-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1831696-018	--------	--------	--------	--------
					Result	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		**72.9**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		**64.0**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**25.2**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		**56.2**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		**50.3**	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**85.7**	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		**82.1**	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		**92.0**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**108**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**102**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**96.5**	----	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	SRT-BH415-0.5 - 20-Oct-2018 00:00	Grey rocky soil with organic matter.
EA200: Description	SRT-BH419-1.05 - 20-Oct-2018 00:00	Brown sandy soil.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	29	129
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP075(SIM)T: PAH Surrogates - Continued			
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES1831696**	Page	: 1 of 33
Amendment	: **1**		
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 24-Oct-2018
Order number	: .	Date Analysis Commenced	: 26-Oct-2018
C-O-C number	: ----	Issue Date	: 07-Nov-2018
Sampler	: ----		
Site	: 1791865-SM TSE		
Quote number	: SY/698/17 C V4		
No. of samples received	: 21		
No. of samples analysed	: 9		

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

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

This Quality Control Report contains the following information:

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

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*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Emily Daos	Team Leader - Asbestos	Melbourne Asbestos, Springvale, VIC
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA029-A: pH Measurements (QC Lot: 2012278)									
EB1824886-001	Anonymous	EA029: pH KCl (23A)	----	0.1	pH Unit	5.7	5.8	1.74	0% - 20%
		EA029: pH OX (23B)	----	0.1	pH Unit	4.2	4.1	2.41	0% - 20%
EA029-B: Acidity Trail (QC Lot: 2012278)									
EB1824886-001	Anonymous	EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	0.021	0.00	No Limit
		EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	0.021	0.00	No Limit
		EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	<2	0.00	No Limit
		EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	12	13	0.00	No Limit
		EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	12	13	0.00	No Limit
EA029-C: Sulfur Trail (QC Lot: 2012278)									
EB1824886-001	Anonymous	EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-D: Calcium Values (QC Lot: 2012278)									
EB1824886-001	Anonymous	EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	<0.020	<0.020	0.00	No Limit
		EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-E: Magnesium Values (QC Lot: 2012278)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA029-E: Magnesium Values (QC Lot: 2012278) - continued									
EB1824886-001	Anonymous	EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-H: Acid Base Accounting (QC Lot: 2012278)									
EB1824886-001	Anonymous	EA029: ANC Fineness Factor	----	0.5	-	1.5	1.5	0.00	No Limit
		EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA029: Liming Rate	----	1	kg CaCO3/t	<1	<1	0.00	No Limit
		EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	<1	0.00	No Limit
		EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	<10	0.00	No Limit
		EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2002808)									
ES1831696-010	SRT-BH419-1.05	EA055: Moisture Content	----	0.1	%	17.6	17.6	0.00	0% - 50%
ES1831722-002	Anonymous	EA055: Moisture Content	----	0.1	%	13.9	14.5	4.37	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 2011133)									
ES1831696-002	SRT-BH415-0.5	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	7	7	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	4	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	16	17	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	20	24	17.0	No Limit
ES1831865-002	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	13	13	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	6	6	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	10	9	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	16	16	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	18	18	0.00	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 2016964)									
ES1831696-017	SRT-QCA106	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	7	8	18.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	3	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	14	12	19.4	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005T: Total Metals by ICP-AES (QC Lot: 2016964) - continued									
ES1831696-017	SRT-QCA106	EG005T: Zinc	7440-66-6	5	mg/kg	21	20	6.89	No Limit
ES1832139-003	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	5	6	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	6	6	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	14	15	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2011132)									
ES1831696-002	SRT-BH415-0.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1831865-002	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2016963)									
ES1831696-017	SRT-QCA106	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1832139-003	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP035G: Total Phenol by Discrete Analyser (QC Lot: 2002856)									
ES1831511-001	Anonymous	EP035G: Phenols (Total)	----	1	mg/kg	<1	<1	0.00	No Limit
EP035G: Total Phenol by Discrete Analyser (QC Lot: 2019150)									
ES1831696-017	SRT-QCA106	EP035G: Phenols (Total)	----	1	mg/kg	<1	<1	0.00	No Limit
ES1832758-004	Anonymous	EP035G: Phenols (Total)	----	1	mg/kg	<1	<1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2003254)									
ES1831676-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1831795-009	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2016900)									
ES1831696-017	SRT-QCA106	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2003253)									
ES1831676-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2003253) - continued									
ES1831676-001	Anonymous	EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
ES1831795-009	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2016899)									
ES1831696-017	SRT-QCA106	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2016899) - continued									
ES1831696-017	SRT-QCA106	EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2003253)									
ES1831676-001	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
ES1831795-009	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2003253) - continued									
ES1831795-009	Anonymous	EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2016899)									
ES1831696-017	SRT-QCA106	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2004750)									
ES1831722-002	Anonymous	EP074: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP074: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2004750) - continued									
ES1831722-002	Anonymous	EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2016917)									
ES1831696-017	SRT-QCA106	EP074: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP074: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074B: Oxygenated Compounds (QC Lot: 2004750)									
ES1831722-002	Anonymous	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.00	No Limit
EP074B: Oxygenated Compounds (QC Lot: 2016917)									
ES1831696-017	SRT-QCA106	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.00	No Limit
EP074C: Sulfonated Compounds (QC Lot: 2004750)									
ES1831722-002	Anonymous	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074C: Sulfonated Compounds (QC Lot: 2016917)									
ES1831696-017	SRT-QCA106	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074D: Fumigants (QC Lot: 2004750)									
ES1831722-002	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074D: Fumigants (QC Lot: 2004750) - continued									
ES1831722-002	Anonymous	EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074D: Fumigants (QC Lot: 2016917)									
ES1831696-017	SRT-QCA106	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2004750)									
ES1831722-002	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2016917)									
ES1831696-017	SRT-QCA106	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2016917) - continued									
ES1831696-017	SRT-QCA106	EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 2004750)									
ES1831722-002	Anonymous	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 2016917)									
ES1831696-017	SRT-QCA106	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074F: Halogenated Aromatic Compounds (QC Lot: 2016917) - continued									
ES1831696-017	SRT-QCA106	EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 2004750)									
ES1831722-002	Anonymous	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 2016917)									
ES1831696-017	SRT-QCA106	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074H: Naphthalene (QC Lot: 2004750)									
ES1831722-002	Anonymous	EP074: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP074H: Naphthalene (QC Lot: 2016917)									
ES1831696-017	SRT-QCA106	EP074: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2003252)									
ES1831676-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2003252) - continued									
ES1831676-001	Anonymous	EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1831795-009	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2016898)									
ES1831696-017	SRT-QCA106	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2016898) - continued									
ES1831696-017	SRT-QCA106	EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2003251)									
ES1831676-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1831795-009	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2003344)									
ES1831662-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1831662-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2004751)									
ES1831722-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2016897)									
ES1831696-017	SRT-QCA106	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2016916)									
ES1831696-017	SRT-QCA106	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2003251)									
ES1831676-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1831795-009	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2003344)									
ES1831662-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	12	<10	17.3	No Limit
ES1831662-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	14	15	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2004751)									
ES1831722-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2016897)									
ES1831696-017	SRT-QCA106	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2016916)									
ES1831696-017	SRT-QCA106	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080: BTEXN (QC Lot: 2003344)									
ES1831662-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES1831662-002	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP080: BTEXN (QC Lot: 2004751)									
ES1831722-002	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP080: BTEXN (QC Lot: 2016916)									
ES1831696-017	SRT-QCA106	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020T: Total Metals by ICP-MS (QC Lot: 2008263)									
ES1831778-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 2008263) - continued									
ES1831778-001	Anonymous	EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
ES1831667-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.042	0.042	0.00	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.009	0.010	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.001	0.002	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.007	0.007	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2004297)									
ES1831585-011	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
ES1831688-004	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2002627)									
ES1831437-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	50	50	0.00	No Limit
ES1831652-008	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2002627)									
ES1831437-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	60	60	0.00	No Limit
ES1831652-008	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 2002627)									
ES1831437-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	22	21	0.00	0% - 50%
		EP080: ortho-Xylene	95-47-6	2	µg/L	13	13	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
ES1831652-008	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit

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

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA029-A: pH Measurements (QCLot: 2012278)								
EA029: pH KCl (23A)	----	0.1	pH Unit	<0.1	4.6 pH Unit	97.8	70	130
EA029: pH OX (23B)	----	0.1	pH Unit	<0.1	4.3 pH Unit	102	70	130
EA029-B: Acidity Trail (QCLot: 2012278)								
EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	17.7 mole H+ / t	112	70	130
EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	35.2 mole H+ / t	95.4	70	130
EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	----	----	----	----
EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029-C: Sulfur Trail (QCLot: 2012278)								
EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	0.052 % S	108	70	130
EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	0.158 % S	85.7	70	130
EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	----	----	----	----
EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	----	----	----	----
EA029-D: Calcium Values (QCLot: 2012278)								
EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	<0.020	0.097 % Ca	116	70	130
EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	<0.020	0.22 % Ca	97.9	70	130
EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	----	----	----	----
EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	----	----	----	----
EA029-E: Magnesium Values (QCLot: 2012278)								
EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	0.25 % Mg	79.9	70	130
EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	0.234 % Mg	83.9	70	130
EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	----	----	----	----
EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	----	----	----	----
EA029-H: Acid Base Accounting (QCLot: 2012278)								
EA029: ANC Fineness Factor	----	0.5	-	<0.5	----	----	----	----
EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate	----	1	kg CaCO3/t	<1	----	----	----	----
EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	----	----	----	----

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 2011133)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	97.8	86	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	100	83	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	96.9	76	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	101	86	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	101	80	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	105	87	123
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	106	80	122
EG005T: Total Metals by ICP-AES (QCLot: 2016964)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	112	86	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	98.5	83	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	87.6	76	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	100	86	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	97.1	80	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	98.4	87	123
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	106	80	122
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2011132)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	73.7	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2016963)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	88.2	70	105
EP035G: Total Phenol by Discrete Analyser (QCLot: 2002856)								
EP035G: Phenols (Total)	----	1	mg/kg	<1	5 mg/kg	71.1	60	102
EP035G: Total Phenol by Discrete Analyser (QCLot: 2019150)								
EP035G: Phenols (Total)	----	1	mg/kg	<1	5 mg/kg	80.0	60	102
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2003254)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	116	62	126
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2016900)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	114	62	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 2003253)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	95.5	69	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	93.7	65	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	90.0	67	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	91.4	68	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.5	65	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.7	67	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	88.2	69	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	90.1	62	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	89.7	63	117

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 2003253) - continued								
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	93.5	66	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	91.4	64	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	90.6	66	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.2	67	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	87.2	67	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	93.9	69	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	93.7	69	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	99.4	56	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	103	62	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	74.3	66	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	103	64	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	79.0	54	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2016899)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	87.2	69	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	88.7	65	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	87.0	67	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	91.8	68	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	82.9	65	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	87.0	67	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	92.7	69	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	88.6	62	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	88.0	63	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.7	66	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	88.7	64	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	92.7	66	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	93.3	67	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	91.1	67	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	92.1	69	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	89.4	69	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	87.1	56	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	90.2	62	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	89.8	66	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	87.7	64	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	79.4	54	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2003253)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	86.7	59	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.6	62	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	92.0	54	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	85.0	67	119

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2003253) - continued								
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	82.0	70	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	85.2	72	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	80.7	68	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	76.1	68	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	86.1	69	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	86.3	76	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	80.4	64	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	84.0	70	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	84.0	69	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	87.4	66	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	83.0	68	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	93.1	62	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	90.6	68	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	97.6	65	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	82.6	41	123
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2016899)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	77.0	59	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	77.5	62	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	75.0	54	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	89.8	67	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	89.1	70	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	89.8	72	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	79.1	68	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	78.9	68	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	87.8	69	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	91.7	76	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	77.7	64	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	89.2	70	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	83.3	69	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	87.9	66	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	82.0	68	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	94.8	62	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	84.6	68	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	90.8	65	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	64.6	41	123
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2004750)								
EP074: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	94.5	71	121
EP074: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	93.0	65	131
EP074: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	95.4	72	114

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2004750) - continued								
EP074: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	94.7	70	116
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	92.0	67	113
EP074: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	95.8	75	115
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	94.0	65	117
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	93.7	66	122
EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	92.7	68	118
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	92.1	69	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	92.4	69	117
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	93.7	69	115
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	91.1	66	118
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	89.1	59	125
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2016917)								
EP074: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	104	71	121
EP074: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	105	65	131
EP074: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	104	72	114
EP074: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	102	70	116
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	101	67	113
EP074: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	103	75	115
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	105	65	117
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	104	66	122
EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	106	68	118
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	104	69	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	108	69	117
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	103	69	115
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	104	66	118
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	104	59	125
EP074B: Oxygenated Compounds (QCLot: 2004750)								
EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	10 mg/kg	76.8	30	156
EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	10 mg/kg	86.3	58	136
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	10 mg/kg	94.7	62	132
EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	10 mg/kg	84.4	54	136
EP074B: Oxygenated Compounds (QCLot: 2016917)								
EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	10 mg/kg	101	30	156
EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	10 mg/kg	84.0	58	136
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	10 mg/kg	95.6	62	132
EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	10 mg/kg	90.6	54	136

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074C: Sulfonated Compounds (QCLot: 2004750)								
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	80.6	54	126
EP074C: Sulfonated Compounds (QCLot: 2016917)								
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	94.5	54	126
EP074D: Fumigants (QCLot: 2004750)								
EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	87.5	60	126
EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	96.2	68	124
EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	88.8	51	119
EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	85.6	52	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	95.8	63	115
EP074D: Fumigants (QCLot: 2016917)								
EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	106	60	126
EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	108	68	124
EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	100	51	119
EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	98.6	52	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	97.8	63	115
EP074E: Halogenated Aliphatic Compounds (QCLot: 2004750)								
EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	10 mg/kg	76.6	30	148
EP074: Chloromethane	74-87-3	5	mg/kg	<5	10 mg/kg	78.4	41	141
EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	10 mg/kg	88.0	43	147
EP074: Bromomethane	74-83-9	5	mg/kg	<5	10 mg/kg	81.8	47	141
EP074: Chloroethane	75-00-3	5	mg/kg	<5	10 mg/kg	88.6	49	143
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	10 mg/kg	92.5	49	135
EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	93.2	54	126
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	75.4	43	129
EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	93.1	64	120
EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	93.8	67	125
EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	90.0	69	121
EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	93.4	65	117
EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	95.3	65	123
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	92.1	59	125
EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	92.1	65	125
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	93.0	70	118
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	90.5	68	118
EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	98.1	64	126
EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	96.0	68	122
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	97.8	67	143
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	94.1	62	122
EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	86.6	54	128

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 2004750) - continued								
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	90.5	55	129
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	94.0	65	121
EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	96.4	61	125
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	88.1	20	134
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	94.1	53	129
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	89.7	50	128
EP074E: Halogenated Aliphatic Compounds (QCLot: 2016917)								
EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	10 mg/kg	97.7	30	148
EP074: Chloromethane	74-87-3	5	mg/kg	<5	10 mg/kg	101	41	141
EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	10 mg/kg	104	43	147
EP074: Bromomethane	74-83-9	5	mg/kg	<5	10 mg/kg	98.7	47	141
EP074: Chloroethane	75-00-3	5	mg/kg	<5	10 mg/kg	100	49	143
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	10 mg/kg	103	49	135
EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	104	54	126
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	81.4	43	129
EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	104	64	120
EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	102	67	125
EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	107	69	121
EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	102	65	117
EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	100	65	123
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	99.4	59	125
EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	102	65	125
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	102	70	118
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	106	68	118
EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	110	64	126
EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	102	68	122
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	102	67	143
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	104	62	122
EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	94.8	54	128
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	94.8	55	129
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	104	65	121
EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	97.6	61	125
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	96.9	20	134
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	89.1	53	129
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	110	50	128
EP074F: Halogenated Aromatic Compounds (QCLot: 2004750)								
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	93.6	68	116
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	92.4	70	114
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	92.7	68	122

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074F: Halogenated Aromatic Compounds (QCLot: 2004750) - continued								
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	90.5	67	123
EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	91.8	70	116
EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	90.3	67	117
EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	89.7	70	114
EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	85.5	48	122
EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	85.6	52	122
EP074F: Halogenated Aromatic Compounds (QCLot: 2016917)								
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	103	68	116
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	106	70	114
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	105	68	122
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	100	67	123
EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	104	70	116
EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	102	67	117
EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	102	70	114
EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	105	48	122
EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	107	52	122
EP074G: Trihalomethanes (QCLot: 2004750)								
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	91.5	66	124
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	88.3	61	121
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	90.4	63	121
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	83.1	60	126
EP074G: Trihalomethanes (QCLot: 2016917)								
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	107	66	124
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	106	61	121
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	98.7	63	121
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	93.5	60	126
EP074H: Naphthalene (QCLot: 2004750)								
EP074: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	87.6	67	129
EP074H: Naphthalene (QCLot: 2016917)								
EP074: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	105	67	129
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2003252)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	105	77	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	106	72	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	99.0	73	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	104	72	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	108	75	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	97.6	77	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	110	73	127

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2003252) - continued								
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	112	74	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	95.3	69	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	102	75	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	95.5	68	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	103	74	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	97.9	70	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	96.1	61	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	102	62	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	94.2	63	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2016898)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	97.1	77	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	96.9	72	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	92.8	73	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	94.4	72	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	99.8	75	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	89.8	77	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	102	73	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	104	74	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	87.4	69	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	94.0	75	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	91.0	68	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	98.2	74	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	89.3	70	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	83.3	61	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	85.8	62	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	79.5	63	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2003251)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	109	75	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	101	77	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	91.9	71	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2003344)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	81.2	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2004751)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	80.9	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2016897)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	90.5	75	129

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2016897) - continued								
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	95.2	77	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	99.9	71	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2016916)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	79.6	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2003251)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	104	77	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	95.4	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	93.3	63	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2003344)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	85.6	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2004751)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	85.9	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2016897)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	89.6	77	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	98.3	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	105	63	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2016916)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	81.2	68	128
EP080: BTEXN (QCLot: 2003344)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	84.9	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	86.4	67	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	84.8	65	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	85.0	66	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	90.9	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	96.7	63	119
EP080: BTEXN (QCLot: 2004751)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	86.1	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	84.6	67	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	83.4	65	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	83.2	66	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	86.1	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	88.3	63	119
EP080: BTEXN (QCLot: 2016916)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	80.3	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	79.5	67	121

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP080: BTEXN (QCLot: 2016916) - continued								
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	76.4	65	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	77.1	66	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	82.7	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	85.2	63	119

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 2008263)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	100	82	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	97.0	84	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.4	86	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.7	83	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	96.3	85	115
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.8	84	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	100	79	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2004297)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	97.9	77	111
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2003321)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	86.0	62	107
EP068A: Organochlorine Pesticides (OC) (QCLot: 2003319)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	94.9	65	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	98.7	58	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	94.1	69	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	101	70	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	104	69	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	93.9	65	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	96.2	66	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	104	67	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	102	64	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	104	67	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	105	63	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	103	65	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	94.4	66	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	92.1	65	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	101	67	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	105	72	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	93.0	67	109

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 2003319) - continued								
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	106	65	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	95.0	65	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	99.2	64	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	93.4	61	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2003319)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	76.6	66	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	78.8	64	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	23.7	20	48
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	87.5	70	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	99.4	71	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	98.4	77	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	80.2	70	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	96.3	68	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	98.0	69	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	98.7	75	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	78.8	67	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	93.7	69	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	98.2	72	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	93.6	68	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	92.3	64	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	99.4	68	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	98.4	74	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	100	66	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	76.7	52	128
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2003320)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	72.0	50	94
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	94.7	64	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	95.8	62	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	88.1	64	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	99.7	63	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	97.9	64	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	99.8	64	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	97.0	63	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	84.4	64	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	87.1	63	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	81.1	62	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	80.9	63	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	85.9	63	117

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2003320) - continued								
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	68.6	60	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	74.0	61	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	83.1	59	118
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2002627)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	89.6	75	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2003318)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	81.5	76	116
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	100	83	109
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	87.1	75	113
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2002627)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	88.9	75	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2003318)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	2500 µg/L	83.4	76	114
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	3500 µg/L	88.9	81	111
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1500 µg/L	86.0	77	119
EP080: BTEXN (QCLot: 2002627)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	93.7	70	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	90.8	69	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	92.9	70	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	89.8	69	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	91.9	72	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	95.6	70	120

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005T: Total Metals by ICP-AES (QCLot: 2011133)							
ES1831696-002	SRT-BH415-0.5	EG005T: Arsenic	7440-38-2	50 mg/kg	98.4	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	99.6	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	102	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	101	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	99.0	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	100.0	70	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 2011133) - continued							
ES1831696-002	SRT-BH415-0.5	EG005T: Zinc	7440-66-6	250 mg/kg	102	70	130
EG005T: Total Metals by ICP-AES (QCLot: 2016964)							
ES1831696-017	SRT-QCA106	EG005T: Arsenic	7440-38-2	50 mg/kg	114	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.6	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	102	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	100	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	97.8	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	100	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	104	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2011132)							
ES1831696-002	SRT-BH415-0.5	EG035T: Mercury	7439-97-6	5 mg/kg	82.2	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2016963)							
ES1831696-017	SRT-QCA106	EG035T: Mercury	7439-97-6	5 mg/kg	103	70	130
EP035G: Total Phenol by Discrete Analyser (QCLot: 2002856)							
ES1831511-001	Anonymous	EP035G: Phenols (Total)	----	4.2 mg/kg	87.0	70	130
EP035G: Total Phenol by Discrete Analyser (QCLot: 2019150)							
ES1831696-017	SRT-QCA106	EP035G: Phenols (Total)	----	4.2 mg/kg	70.2	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2003254)							
ES1831676-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	99.0	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2016900)							
ES1831696-017	SRT-QCA106	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	115	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2003253)							
ES1831676-001	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	116	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	108	70	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	80.2	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	110	70	130
		EP068: Endrin	72-20-8	2 mg/kg	118	70	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	97.0	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2016899)							
ES1831696-017	SRT-QCA106	EP068: gamma-BHC	58-89-9	0.5 mg/kg	101	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	94.2	70	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	99.4	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	84.4	70	130
		EP068: Endrin	72-20-8	2 mg/kg	86.1	70	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	85.3	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2003253)							

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2003253) - continued							
ES1831676-001	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	86.8	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	99.7	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	115	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	110	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	104	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2016899)							
ES1831696-017	SRT-QCA106	EP068: Diazinon	333-41-5	0.5 mg/kg	97.4	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	90.1	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	82.6	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	81.6	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	71.0	70	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2004750)							
ES1831722-002	Anonymous	EP074: Benzene	71-43-2	2.5 mg/kg	82.9	70	130
		EP074: Toluene	108-88-3	2.5 mg/kg	83.6	70	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2016917)							
ES1831696-017	SRT-QCA106	EP074: Benzene	71-43-2	2.5 mg/kg	86.0	70	130
		EP074: Toluene	108-88-3	2.5 mg/kg	80.1	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 2004750)							
ES1831722-002	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	2.5 mg/kg	74.8	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	80.0	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 2016917)							
ES1831696-017	SRT-QCA106	EP074: 1.1-Dichloroethene	75-35-4	2.5 mg/kg	81.2	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	88.3	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 2004750)							
ES1831722-002	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	85.8	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 2016917)							
ES1831696-017	SRT-QCA106	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	80.1	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2003252)							
ES1831676-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	98.5	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	114	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2016898)							
ES1831696-017	SRT-QCA106	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	97.0	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	113	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2003251)							
ES1831676-001	Anonymous	EP071: C10 - C14 Fraction	----	523 mg/kg	110	73	137

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2003251) - continued							
ES1831676-001	Anonymous	EP071: C15 - C28 Fraction	----	2319 mg/kg	119	53	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	121	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2003344)							
ES1831662-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	91.0	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2004751)							
ES1831722-002	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	88.4	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2016897)							
ES1831696-017	SRT-QCA106	EP071: C10 - C14 Fraction	----	523 mg/kg	88.4	73	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	115	53	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	129	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2016916)							
ES1831696-017	SRT-QCA106	EP080: C6 - C9 Fraction	----	32.5 mg/kg	85.4	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2003251)							
ES1831676-001	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	110	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	114	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	113	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2003344)							
ES1831662-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	112	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2004751)							
ES1831722-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	93.6	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2016897)							
ES1831696-017	SRT-QCA106	EP071: >C10 - C16 Fraction	----	860 mg/kg	101	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	124	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	112	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2016916)							
ES1831696-017	SRT-QCA106	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	85.9	70	130
EP080: BTEXN (QCLot: 2003344)							
ES1831662-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	76.0	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	79.2	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	75.7	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	76.0	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	77.6	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	76.1	70	130
EP080: BTEXN (QCLot: 2004751)							

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 2004751) - continued							
ES1831722-002	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	77.4	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	76.9	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	78.1	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	76.8	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	78.4	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	72.1	70	130
EP080: BTEXN (QCLot: 2016916)							
ES1831696-017	SRT-QCA106	EP080: Benzene	71-43-2	2.5 mg/kg	76.2	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	78.6	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	78.5	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	80.3	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	82.0	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	80.5	70	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 2008263)							
ES1831667-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	99.0	70	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	100	70	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	99.4	70	130
		EG020A-T: Copper	7440-50-8	1 mg/L	98.2	70	130
		EG020A-T: Lead	7439-92-1	1 mg/L	104	70	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	98.9	70	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	100	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2004297)							
ES1831585-010	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	100	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2002627)							
ES1831437-002	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	102	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2002627)							
ES1831437-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	98.5	70	130
EP080: BTEXN (QCLot: 2002627)							
ES1831437-002	Anonymous	EP080: Benzene	71-43-2	25 µg/L	97.3	70	130
		EP080: Toluene	108-88-3	25 µg/L	94.1	70	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	99.4	70	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080: BTEXN (QCLot: 2002627) - continued							
ES1831437-002	Anonymous	EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	102	70	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	104	70	130
		EP080: Naphthalene	91-20-3	25 µg/L	86.7	70	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES1831696**	Page	: 1 of 14
Amendment	: **1**		
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 24-Oct-2018
Site	: 1791865-SM TSE	Issue Date	: 07-Nov-2018
Sampler	: ----	No. of samples received	: 21
Order number	: .	No. of samples analysed	: 9

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.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068T: Organophosphorus Pesticide Surrogate	ES1831696-018	SRT-RB106	**DEF**	78-48-8	64.0 %	67-111 %	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EP035G: Total Phenol by Discrete Analyser						
Soil Glass Jar - Unpreserved						
SRT-QCA106	05-Nov-2018	03-Nov-2018	**2**	05-Nov-2018	03-Nov-2018	**2**
EP074A: Monocyclic Aromatic Hydrocarbons						
Soil Glass Jar - Unpreserved						
SRT-QCA106	02-Nov-2018	27-Oct-2018	**6**	02-Nov-2018	27-Oct-2018	**6**
EP074B: Oxygenated Compounds						
Soil Glass Jar - Unpreserved						
SRT-QCA106	02-Nov-2018	27-Oct-2018	**6**	02-Nov-2018	27-Oct-2018	**6**
EP074C: Sulfonated Compounds						
Soil Glass Jar - Unpreserved						
SRT-QCA106	02-Nov-2018	27-Oct-2018	**6**	02-Nov-2018	27-Oct-2018	**6**
EP074D: Fumigants						
Soil Glass Jar - Unpreserved						
SRT-QCA106	02-Nov-2018	27-Oct-2018	**6**	02-Nov-2018	27-Oct-2018	**6**
EP074E: Halogenated Aliphatic Compounds						
Soil Glass Jar - Unpreserved						
SRT-QCA106	02-Nov-2018	27-Oct-2018	**6**	02-Nov-2018	27-Oct-2018	**6**
EP074F: Halogenated Aromatic Compounds						
Soil Glass Jar - Unpreserved						
SRT-QCA106	02-Nov-2018	27-Oct-2018	**6**	02-Nov-2018	27-Oct-2018	**6**
EP074G: Trihalomethanes						
Soil Glass Jar - Unpreserved						
SRT-QCA106	02-Nov-2018	27-Oct-2018	**6**	02-Nov-2018	27-Oct-2018	**6**
EP074H: Naphthalene						
Soil Glass Jar - Unpreserved						
SRT-QCA106	02-Nov-2018	27-Oct-2018	**6**	02-Nov-2018	27-Oct-2018	**6**
EP080/071: Total Petroleum Hydrocarbons						
Soil Glass Jar - Unpreserved						
SRT-TB106, SRT-TS106, Trip Spike Control	----	----	----	30-Oct-2018	29-Oct-2018	**1**

Matrix: **SOIL**

Method / Container / Client Sample ID(s)		Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved							
SRT-TB106, Trip Spike Control	SRT-TS106,	----	----	----	30-Oct-2018	29-Oct-2018	1
EP080: BTEXN							
Soil Glass Jar - Unpreserved							
SRT-TB106, Trip Spike Control	SRT-TS106,	----	----	----	30-Oct-2018	29-Oct-2018	1

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Moisture Content	2	22	9.09	10.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

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

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

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

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

Matrix: **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

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
EA029-A: pH Measurements								
Snap Lock Bag - frozen (EA029)								
SRT-BH415-4.0,	SRT-BH419-3.0	**20-Oct-2018**	**01-Nov-2018**	15-Jul-2021	✓	**01-Nov-2018**	30-Jan-2019	✓
EA029-B: Acidity Trail								
Snap Lock Bag - frozen (EA029)								
SRT-BH415-4.0,	SRT-BH419-3.0	**20-Oct-2018**	**01-Nov-2018**	15-Jul-2021	✓	**01-Nov-2018**	30-Jan-2019	✓
EA029-C: Sulfur Trail								
Snap Lock Bag - frozen (EA029)								
SRT-BH415-4.0,	SRT-BH419-3.0	**20-Oct-2018**	**01-Nov-2018**	15-Jul-2021	✓	**01-Nov-2018**	30-Jan-2019	✓
EA029-D: Calcium Values								
Snap Lock Bag - frozen (EA029)								
SRT-BH415-4.0,	SRT-BH419-3.0	**20-Oct-2018**	**01-Nov-2018**	15-Jul-2021	✓	**01-Nov-2018**	30-Jan-2019	✓
EA029-E: Magnesium Values								
Snap Lock Bag - frozen (EA029)								
SRT-BH415-4.0,	SRT-BH419-3.0	**20-Oct-2018**	**01-Nov-2018**	15-Jul-2021	✓	**01-Nov-2018**	30-Jan-2019	✓
EA029-F: Excess Acid Neutralising Capacity								
Snap Lock Bag - frozen (EA029)								
SRT-BH415-4.0,	SRT-BH419-3.0	**20-Oct-2018**	**01-Nov-2018**	15-Jul-2021	✓	**01-Nov-2018**	30-Jan-2019	✓
EA029-G: Retained Acidity								
Snap Lock Bag - frozen (EA029)								
SRT-BH415-4.0,	SRT-BH419-3.0	**20-Oct-2018**	**01-Nov-2018**	15-Jul-2021	✓	**01-Nov-2018**	30-Jan-2019	✓
EA029-H: Acid Base Accounting								
Snap Lock Bag - frozen (EA029)								
SRT-BH415-4.0,	SRT-BH419-3.0	**20-Oct-2018**	**01-Nov-2018**	15-Jul-2021	✓	**01-Nov-2018**	30-Jan-2019	✓
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
SRT-QCA106		**20-Oct-2018**	**----**	----	----	**02-Nov-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EA055)								
SRT-BH415-0.5,	SRT-BH419-1.05	**20-Oct-2018**	**----**	----	----	**26-Oct-2018**	03-Nov-2018	✓
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Snap Lock Bag: Separate bag received (EA200)								
SRT-BH415-0.5,	SRT-BH419-1.05	**20-Oct-2018**	**----**	----	----	**30-Oct-2018**	18-Apr-2019	✓
EA200N: Asbestos Quantification (non-NATA)								
Snap Lock Bag: Separate bag received (EA200N)								
SRT-BH415-0.5,	SRT-BH419-1.05	**20-Oct-2018**	**----**	----	----	**30-Oct-2018**	18-Apr-2019	✓
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
SRT-QCA106		**20-Oct-2018**	**02-Nov-2018**	18-Apr-2019	✓	**03-Nov-2018**	18-Apr-2019	✓
Soil Glass Jar - Unpreserved (EG005T)								
SRT-BH415-0.5,	SRT-BH419-1.05	**20-Oct-2018**	**31-Oct-2018**	18-Apr-2019	✓	**31-Oct-2018**	18-Apr-2019	✓

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
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	17-Nov-2018	✓	**03-Nov-2018**	17-Nov-2018	✓
Soil Glass Jar - Unpreserved (EG035T) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**31-Oct-2018**	17-Nov-2018	✓	**31-Oct-2018**	17-Nov-2018	✓
EP035G: Total Phenol by Discrete Analyser							
Soil Glass Jar - Unpreserved (EP035G) SRT-QCA106	**20-Oct-2018**	**05-Nov-2018**	03-Nov-2018	×	**05-Nov-2018**	03-Nov-2018	×
Soil Glass Jar - Unpreserved (EP035G) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**26-Oct-2018**	03-Nov-2018	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	03-Nov-2018	✓	**04-Nov-2018**	12-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP066) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**30-Oct-2018**	05-Dec-2018	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	03-Nov-2018	✓	**04-Nov-2018**	12-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP068) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**30-Oct-2018**	05-Dec-2018	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	03-Nov-2018	✓	**04-Nov-2018**	12-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP068) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**30-Oct-2018**	05-Dec-2018	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP074) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	27-Oct-2018	×	**02-Nov-2018**	27-Oct-2018	×
Soil Glass Jar - Unpreserved (EP074) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**26-Oct-2018**	27-Oct-2018	✓
EP074B: Oxygenated Compounds							
Soil Glass Jar - Unpreserved (EP074) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	27-Oct-2018	×	**02-Nov-2018**	27-Oct-2018	×
Soil Glass Jar - Unpreserved (EP074) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**26-Oct-2018**	27-Oct-2018	✓
EP074C: Sulfonated Compounds							
Soil Glass Jar - Unpreserved (EP074) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	27-Oct-2018	×	**02-Nov-2018**	27-Oct-2018	×
Soil Glass Jar - Unpreserved (EP074) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**26-Oct-2018**	27-Oct-2018	✓

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
EP074D: Fumigants							
Soil Glass Jar - Unpreserved (EP074) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	27-Oct-2018	×	**02-Nov-2018**	27-Oct-2018	×
Soil Glass Jar - Unpreserved (EP074) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**26-Oct-2018**	27-Oct-2018	✓
EP074E: Halogenated Aliphatic Compounds							
Soil Glass Jar - Unpreserved (EP074) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	27-Oct-2018	×	**02-Nov-2018**	27-Oct-2018	×
Soil Glass Jar - Unpreserved (EP074) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**26-Oct-2018**	27-Oct-2018	✓
EP074F: Halogenated Aromatic Compounds							
Soil Glass Jar - Unpreserved (EP074) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	27-Oct-2018	×	**02-Nov-2018**	27-Oct-2018	×
Soil Glass Jar - Unpreserved (EP074) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**26-Oct-2018**	27-Oct-2018	✓
EP074G: Trihalomethanes							
Soil Glass Jar - Unpreserved (EP074) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	27-Oct-2018	×	**02-Nov-2018**	27-Oct-2018	×
Soil Glass Jar - Unpreserved (EP074) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**26-Oct-2018**	27-Oct-2018	✓
EP074H: Naphthalene							
Soil Glass Jar - Unpreserved (EP074) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	27-Oct-2018	×	**02-Nov-2018**	27-Oct-2018	×
Soil Glass Jar - Unpreserved (EP074) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**26-Oct-2018**	27-Oct-2018	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	03-Nov-2018	✓	**03-Nov-2018**	12-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**29-Oct-2018**	05-Dec-2018	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) SRT-TB106, SRT-TS106, Trip Spike Control	**15-Oct-2018**	**29-Oct-2018**	29-Oct-2018	✓	**30-Oct-2018**	29-Oct-2018	×
Soil Glass Jar - Unpreserved (EP080) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	03-Nov-2018	✓	**02-Nov-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP080) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**26-Oct-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP071) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**29-Oct-2018**	05-Dec-2018	✓

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080) SRT-TB106, SRT-TS106, Trip Spike Control	**15-Oct-2018**	**29-Oct-2018**	29-Oct-2018	✓	**30-Oct-2018**	29-Oct-2018	×
Soil Glass Jar - Unpreserved (EP080) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	03-Nov-2018	✓	**02-Nov-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP080) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**26-Oct-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP071) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**29-Oct-2018**	05-Dec-2018	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) SRT-TB106, SRT-TS106, Trip Spike Control	**15-Oct-2018**	**29-Oct-2018**	29-Oct-2018	✓	**30-Oct-2018**	29-Oct-2018	×
Soil Glass Jar - Unpreserved (EP080) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	03-Nov-2018	✓	**02-Nov-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP080) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**26-Oct-2018**	03-Nov-2018	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) SRT-RB106	**20-Oct-2018**	**30-Oct-2018**	18-Apr-2019	✓	**30-Oct-2018**	18-Apr-2019	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) SRT-RB106	**20-Oct-2018**	**----**	----	----	**26-Oct-2018**	17-Nov-2018	✓
EP066: Polychlorinated Biphenyls (PCB)							
Amber Glass Bottle - Unpreserved (EP066) SRT-RB106	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**30-Oct-2018**	05-Dec-2018	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068) SRT-RB106	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**30-Oct-2018**	05-Dec-2018	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068) SRT-RB106	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**30-Oct-2018**	05-Dec-2018	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) SRT-RB106	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**29-Oct-2018**	05-Dec-2018	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
SRT-RB106	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**30-Oct-2018**	05-Dec-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
SRT-RB106	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**26-Oct-2018**	03-Nov-2018	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
SRT-RB106	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**30-Oct-2018**	05-Dec-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
SRT-RB106	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**26-Oct-2018**	03-Nov-2018	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
SRT-RB106	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**26-Oct-2018**	03-Nov-2018	✓

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	22	**9.09**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	17	**17.65**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	3	17	**17.65**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	3	17	**17.65**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	3	25	**12.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	17	**17.65**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	25	**16.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	7	**28.57**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	2	17	**11.76**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	17	**11.76**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	17	**11.76**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	17	**11.76**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	25	**12.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	7	**28.57**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	2	17	**11.76**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	17	**11.76**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	17	**11.76**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	17	**11.76**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	25	**12.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	7	**28.57**	**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		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	2	17	11.76	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	17	11.76	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	17	11.76	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	2	25	8.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	17	11.76	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	25	12.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	7	28.57	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	0.00	5.00	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	3	0.00	5.00	×	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Polychlorinated Biphenyls (PCB)	EP066	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	SOIL	In house: Referenced to Ahern et al 2004 - a suspension peroxide oxidation method following the 'sulfur trail' by determining the level of 1M KCL extractable sulfur and the sulfur level after oxidation of soil sulphides. The 'acidity trail' is followed by measurement of TAA, TPA and TSA. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5.
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Asbestos Identification in Soils	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Asbestos Classification and Quantitation per NEPM 2013	* EA200N	SOIL	Asbestos Classification and Quantitation per NEPM 2013 with Confirmation of Identification by AS 4964 - 2004 Gravimetric determination of Asbestos Containing Material, Fibrous Asbestos, Asbestos Fines and sample weight and calculation of percentage concentrations per NEPM protocols. Asbestos (Fines and Fibrous FA+AF) is reported as the equivalent weight in the sample received after accounting for sub-sampling (where applicable for the <7mm and/or <2mm fractions).
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, 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 (2013) Schedule B(3)
Total Phenol By Discrete Analyser	EP035G	SOIL	In house: Referenced to APHA 5530 B&D Steam distillable Phenols are reacted with 4-aminoantipyrine. The resultant colour intensity is measured by Seal
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270D 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 (2013) Schedule B(3) (Method 504)
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270D 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 (2013) Schedule B(3) (Method 504,505)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM amended 2013.
Volatile Organic Compounds	EP074	SOIL	In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 501)

Analytical Methods	Method	Matrix	Method Descriptions
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D. 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 (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM amended 2013.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The 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 (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample 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 (2013) Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample 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 (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A 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 the QC requirements of NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Drying at 85 degrees, bagging and labelling (ASS)	EN020PR	SOIL	In house
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 (2013) Schedule B(3) (Method 202)
Phenols After Microdistillation	EP035D	SOIL	In house: Referenced to APHA 5530 A, B&D. pH adjusted Steam distillable Phenolic compounds. The resultant colour intensity is measured by Discrete Analyser.

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.
Digestion for Total Recoverable Metals	EN25	WATER	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 (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

5.11.18

Mishal
29/10/2018 9:00AM

Fadi Soro

From: NurEzzati Daud
Sent: Friday, 26 October 2018 6:17 PM
To: Fadi Soro
Cc: Loren Schiavon
Subject: FW:
Attachments: ES1829955_COC_1.pdf; ES1830703_COC.pdf

Hi Fadi,

Can you please organise this rebatch for Golder as per the tables below?

Thank you!

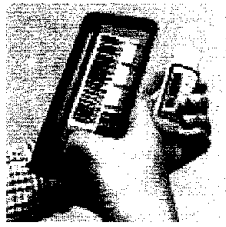
Kind Regards,

Nur Ezzati Daud
Client Services Officer, Environmental
Sydney

T +61 2 8784 8555 D +61 2 8784 8529
F +61 2 8784 8500
nurezzati.daud@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

Environmental Division
Sydney
Work Order Reference
ES1832028

Telephone : +61-2-8784 8555



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ES1832028

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From: Houston, Barry [mailto:bhouston@golder.com.au]
Sent: Friday, 26 October 2018 6:08 PM
To: ALSEnviro Sydney <ALSEnviro.Sydney@ALSGlobal.com>; Sepan Mahamad <Sepan.Mahamad@alsglobal.com>; Brenda Hong <Brenda.Hong@alsglobal.com>
Cc: Doyle, Shane <SDoyle@golder.com.au>; Bonetti, Rita <RBonetti@golder.com.au>
Subject:

Hi

Can we get the samples identified below scheduled for TCLP analysis:

LAB REPORT ES1829955			
Sample Ref		**Analysis**	**Lab Report #**
BH420 1.0	1	Lead and mercury	2
BH412 0.5	2	BaP	36
BH416 0.25	3	Lead	41
BH422 0.5	4	Lead and BaP	58
BH426 0.1	5	Lead	63
BH426 1	6	Lead	65
BH421 3.0	7	PFOS	51

LAB REPORT ES1830703			
Sample Ref		**Analysis**	**Lab Report #**
BH414 0.4	8	Lead and BaP	2
BH423 0.5	9	Lead and BaP	6
BH425 0.15	10	Lead and BaP	13

Please let me know if there are any issues

Kind regards
Barry

Barry Houston (BSc. MSc.)
Senior Environmental Scientist

GOLDER

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SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **ES1832028**		
Amendment	: **1**		
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: RBonetti@golder.com.au	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9478 3901	Facsimile	: +61-2-8784 8500
Project	: SYDNEY METRO	Page	: 1 of 3
Order number	: .	Quote number	: ES2017GOLASS0019 (SY/698/17 C V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 29-Oct-2018 09:00	Issue Date	: 12-Nov-2018
Client Requested Due Date	: 05-Nov-2018	Scheduled Reporting Date	: **05-Nov-2018**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: 4.1' C
Receipt Detail	:	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
- **REBATCH OF ES1829955 & ES1830703**
- **(12/11/18) This is an updated SRN which reflects a change in ID for samples 001-010.**
- **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 absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.

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	Client sampling date / time	Client sample ID	SOIL - EG005C Leachable Metals by ICPAES	SOIL - EG035C Leachable Mercury	SOIL - EN33a TCLP Leachate	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - EP231X PFAS - Full Suite (28 analytes)
ES1832028-001	06-Oct-2018 00:00	SRT-BH420-1.0	✓	✓	✓		
ES1832028-002	06-Oct-2018 00:00	SRT-BH412-0.5			✓	✓	
ES1832028-003	06-Oct-2018 00:00	SRT-BH416-0.25	✓		✓		
ES1832028-004	06-Oct-2018 00:00	SRT-BH422-0.5	✓		✓	✓	
ES1832028-005	06-Oct-2018 00:00	SRT-BH426-0.1	✓		✓		
ES1832028-006	06-Oct-2018 00:00	SRT-BH426-1.0	✓		✓		
ES1832028-007	06-Oct-2018 00:00	SRT-BH421-3.0			✓		✓
ES1832028-008	13-Oct-2018 00:00	SRT-BH414-0.4	✓		✓	✓	
ES1832028-009	13-Oct-2018 00:00	SRT-BH423-0.5	✓		✓	✓	
ES1832028-010	13-Oct-2018 00:00	SRT-BH425-0.15	✓		✓	✓	

Proactive Holding Time Report

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

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

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received Date	Samples Received Evaluation	Instructions Received Date	Instructions Received Evaluation
EN33a: TCLP for Non & Semivolatile Analytes							
SRT-BH412-0.5	Non-Volatile Leach: 14 day HT(ε	20-Oct-2018	----	29-Oct-2018	×	----	----
SRT-BH414-0.4	Non-Volatile Leach: 14 day HT(ε	27-Oct-2018	----	29-Oct-2018	×	----	----
SRT-BH422-0.5	Non-Volatile Leach: 14 day HT(ε	20-Oct-2018	----	29-Oct-2018	×	----	----
SRT-BH423-0.5	Non-Volatile Leach: 14 day HT(ε	27-Oct-2018	----	29-Oct-2018	×	----	----
SRT-BH425-0.15	Non-Volatile Leach: 14 day HT(ε	27-Oct-2018	----	29-Oct-2018	×	----	----

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	au_accountspayable@golder.com.au

BARRY HOUSTON

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

RITA BONETTI

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

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1832028**	Page	: 1 of 9
Amendment	: **1**		
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: SYDNEY METRO	Date Samples Received	: 29-Oct-2018 09:00
Order number	: .	Date Analysis Commenced	: 31-Oct-2018
C-O-C number	: ----	Issue Date	: 12-Nov-2018 16:31
Sampler	: ----		
Site	: ----		
Quote number	: SY/698/17 C V4		
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. 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*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini		Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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.

- Amendment (12/11/2018): This report has been amended and re-released to allow a change in ID for samples 001-010. All analysis results are as per the previous report.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH420-1.0	SRT-BH412-0.5	SRT-BH416-0.25	SRT-BH422-0.5	SRT-BH426-0.1
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1832028-001	ES1832028-002	ES1832028-003	ES1832028-004	ES1832028-005
				Result	Result	Result	Result	Result
EN33: TCLP Leach								
Initial pH	----	0.1	pH Unit	**7.4**	**11.2**	**9.0**	**9.4**	**9.2**
After HCl pH	----	0.1	pH Unit	**1.4**	**1.9**	**5.4**	**1.4**	**1.6**
Extraction Fluid Number	----	1	-	**1**	**1**	**2**	**1**	**1**
Final pH	----	0.1	pH Unit	**5.1**	**7.7**	**5.6**	**5.0**	**5.6**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH426-1.0	SRT-BH421-3.0	SRT-BH414-0.4	SRT-BH423-0.5	SRT-BH425-0.15
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1832028-006	ES1832028-007	ES1832028-008	ES1832028-009	ES1832028-010
				Result	Result	Result	Result	Result
EN33: TCLP Leach								
Initial pH	----	0.1	pH Unit	**9.0**	**7.2**	**10.7**	**8.4**	**9.1**
After HCl pH	----	0.1	pH Unit	**1.5**	**1.4**	**1.6**	**1.5**	**1.5**
Extraction Fluid Number	----	1	-	**1**	**1**	**1**	**1**	**1**
Final pH	----	0.1	pH Unit	**5.0**	**5.0**	**6.2**	**5.2**	**5.2**

Analytical Results

Sub-Matrix: **TCLP LEACHATE** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	SRT-BH420-1.0	SRT-BH412-0.5	SRT-BH416-0.25	SRT-BH422-0.5	SRT-BH426-0.1
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
					ES1832028-001	ES1832028-002	ES1832028-003	ES1832028-004	ES1832028-005
					Result	Result	Result	Result	Result
EG005C: Leachable Metals by ICPAES									
Lead	7439-92-1	0.1	mg/L		**1.1**	**----**	**6.8**	**0.1**	**0.1**
EG035C: Leachable Mercury by FIMS									
Mercury	7439-97-6	0.0010	mg/L		<0.0010	**----**	**----**	**----**	**----**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Benzo(a)pyrene	50-32-8	0.5	µg/L		**----**	<0.5	**----**	<0.5	**----**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**----**	**24.6**	**----**	**24.3**	**----**
2-Chlorophenol-D4	93951-73-6	1.0	%		**----**	**67.5**	**----**	**48.6**	**----**
2.4.6-Tribromophenol	118-79-6	1.0	%		**----**	**90.3**	**----**	**83.8**	**----**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**----**	**88.2**	**----**	**82.7**	**----**
Anthracene-d10	1719-06-8	1.0	%		**----**	**95.4**	**----**	**88.2**	**----**
4-Terphenyl-d14	1718-51-0	1.0	%		**----**	**88.9**	**----**	**82.7**	**----**

Analytical Results

Sub-Matrix: TCLP LEACHATE (Matrix: WATER)				Client sample ID	SRT-BH426-1.0	SRT-BH421-3.0	SRT-BH414-0.4	SRT-BH423-0.5	SRT-BH425-0.15
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832028-006	ES1832028-007	ES1832028-008	ES1832028-009	ES1832028-010
					Result	Result	Result	Result	Result
EG005C: Leachable Metals by ICPAES									
Lead	7439-92-1	0.1	mg/L		**0.1**	----	**5.6**	**0.2**	**2.2**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Benzo(a)pyrene	50-32-8	0.5	µg/L		----	----	<0.5	<0.5	<0.5
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		----	<0.02	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	<0.01	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		----	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		----	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		----	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	<0.02	----	----	----

Analytical Results

Sub-Matrix: TCLP LEACHATE (Matrix: WATER)				Client sample ID	SRT-BH426-1.0	SRT-BH421-3.0	SRT-BH414-0.4	SRT-BH423-0.5	SRT-BH425-0.15
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832028-006	ES1832028-007	ES1832028-008	ES1832028-009	ES1832028-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
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	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		----	<0.01	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		----	----	**27.4**	**22.3**	**25.1**
2-Chlorophenol-D4	93951-73-6	1.0	%		----	----	**63.9**	**45.6**	**50.8**
2.4.6-Tribromophenol	118-79-6	1.0	%		----	----	**90.0**	**73.6**	**81.8**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		----	----	**71.6**	**79.4**	**87.8**
Anthracene-d10	1719-06-8	1.0	%		----	----	**73.5**	**67.6**	**71.8**

Analytical Results

Sub-Matrix: TCLP LEACHATE (Matrix: WATER)				Client sample ID	SRT-BH426-1.0	SRT-BH421-3.0	SRT-BH414-0.4	SRT-BH423-0.5	SRT-BH425-0.15
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832028-006	ES1832028-007	ES1832028-008	ES1832028-009	ES1832028-010
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued									
4-Terphenyl-d14	1718-51-0	1.0	%		----	----	87.0	82.5	87.5
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		----	116	----	----	----
13C8-PFOA	----	0.02	%		----	87.3	----	----	----

Surrogate Control Limits

Sub-Matrix: **TCLP LEACHATE**

Compound	CAS Number	Recovery Limits (%) Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES1832028**	Page	: 1 of 6
Amendment	: **1**		
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: SYDNEY METRO	Date Samples Received	: 29-Oct-2018
Order number	: .	Date Analysis Commenced	: 31-Oct-2018
C-O-C number	: ----	Issue Date	: 12-Nov-2018
Sampler	: ----		
Site	: ----		
Quote number	: SY/698/17 C V4		
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. 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*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini		Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005C: Leachable Metals by ICPAES (QC Lot: 2015471)									
ES1832028-001	SRT-BH420-1.0	EG005C: Lead	7439-92-1	0.1	mg/L	1.1	1.1	0.00	0% - 50%
ES1832062-012	Anonymous	EG005C: Lead	7439-92-1	0.1	mg/L	35.9	35.7	0.752	0% - 20%
EG035C: Leachable Mercury by FIMS (QC Lot: 2014696)									
ES1831381-002	Anonymous	EG035C: Mercury	7439-97-6	0.0001	mg/L	<0.0010	<0.0010	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2014800)									
ES1832028-007	SRT-BH421-3.0	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2014800)									
ES1832028-007	SRT-BH421-3.0	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2014800)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2014800) - continued									
ES1832028-007	SRT-BH421-3.0	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2014800)									
ES1832028-007	SRT-BH421-3.0	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 2014800)									
ES1832028-007	SRT-BH421-3.0	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit

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

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EN33: TCLP Leach (QCLot: 2011281)								
EN33a: Initial pH	----	0.1	pH Unit	1.0	----	----	----	----
EN33a: After HCl pH	----	0.1	pH Unit	1.0	----	----	----	----
EN33a: Final pH	----	0.1	pH Unit	1.0	----	----	----	----

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005C: Leachable Metals by ICPAES (QCLot: 2015471)								
EG005C: Lead	7439-92-1	0.1	mg/L	<0.1	0.1 mg/L	100	80	118
EG035C: Leachable Mercury by FIMS (QCLot: 2014696)								
EG035C: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	86.0	79	109
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2014453)								
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	77.0	63	117
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2014800)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.5 µg/L	90.2	70	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.5 µg/L	111	70	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.5 µg/L	84.0	70	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.5 µg/L	115	70	130
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.5 µg/L	101	70	130
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	98.8	70	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2014800)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	2.5 µg/L	113	70	130
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	108	70	130
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	127	70	130
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	91.8	70	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	118	70	130
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	101	70	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	92.2	70	130
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	121	70	130
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	78.2	70	130
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	109	70	130
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	97.4	70	150
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2014800)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	82.2	70	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2014800) - continued								
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	96.6	70	150
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	78.6	70	150
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	111	70	150
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	134	70	150
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	100	70	130
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	109	70	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2014800)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.5 µg/L	117	70	130
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.5 µg/L	99.0	70	130
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.5 µg/L	118	70	130
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.5 µg/L	89.6	70	130

Matrix Spike (MS) Report

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

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005C: Leachable Metals by ICPAES (QCLot: 2015471)							
ES1832028-003	SRT-BH416-0.25	EG005C: Lead	7439-92-1	1 mg/L	# Not Determined	70	130
EG035C: Leachable Mercury by FIMS (QCLot: 2014696)							
ES1831381-004	Anonymous	EG035C: Mercury	7439-97-6	0.01 mg/L	75.5	70	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2014800)							
ES1832028-007	SRT-BH421-3.0	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.5 µg/L	101	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.5 µg/L	114	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.5 µg/L	94.8	50	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.5 µg/L	128	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	123	50	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.5 µg/L	105	50	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2014800)							
ES1832028-007	SRT-BH421-3.0	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	95.8	50	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	125	50	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2014800) - continued							
ES1832028-007	SRT-BH421-3.0	EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	128	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	109	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	125	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	107	50	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	118	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	129	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	85.6	50	130
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	121	50	130
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	98.4	50	150
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2014800)							
ES1832028-007	SRT-BH421-3.0	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	99.2	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	112	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	85.8	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	1.25 µg/L	118	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	131	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	108	50	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	122	50	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2014800)							
ES1832028-007	SRT-BH421-3.0	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.5 µg/L	116	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.5 µg/L	121	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.5 µg/L	127	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.5 µg/L	106	50	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES1832028**	Page	: 1 of 6
Amendment	: **1**		
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Telephone	: +61-2-8784 8555
Project	: SYDNEY METRO	Date Samples Received	: 29-Oct-2018
Site	: ----	Issue Date	: 12-Nov-2018
Sampler	: ----	No. of samples received	: 10
Order number	: .	No. of samples analysed	: 10

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

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

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG005C: Leachable Metals by ICPAES	ES1832028--003	SRT-BH416-0.25	**Lead**	7439-92-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)		Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EN33: TCLP Leach							
Non-Volatile Leach: 14 day HT(e.g. SV organics)							
SRT-BH412-0.5,	SRT-BH422-0.5	31-Oct-2018	20-Oct-2018	**11**	----	----	----
Non-Volatile Leach: 14 day HT(e.g. SV organics)							
SRT-BH414-0.4, SRT-BH425-0.15	SRT-BH423-0.5,	31-Oct-2018	27-Oct-2018	**4**	----	----	----

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	7	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

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
EN33: TCLP Leach							
Non-Volatile Leach: 14 day HT(e.g. SV organics) (EN33a)							
SRT-BH412-0.5, SRT-BH422-0.5	**06-Oct-2018**	**31-Oct-2018**	20-Oct-2018	×	**----**	----	----
Non-Volatile Leach: 14 day HT(e.g. SV organics) (EN33a)							
SRT-BH414-0.4, SRT-BH423-0.5, SRT-BH425-0.15	**13-Oct-2018**	**31-Oct-2018**	27-Oct-2018	×	**----**	----	----
Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN33a)							
SRT-BH420-1.0, SRT-BH416-0.25, SRT-BH426-0.1, SRT-BH426-1.0, SRT-BH421-3.0	**06-Oct-2018**	**31-Oct-2018**	04-Apr-2019	✓	**----**	----	----

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005C: Leachable Metals by ICPAES							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG005C)							
SRT-BH420-1.0, SRT-BH416-0.25, SRT-BH422-0.5, SRT-BH426-0.1, SRT-BH426-1.0, SRT-BH414-0.4, SRT-BH423-0.5, SRT-BH425-0.15	**31-Oct-2018**	**02-Nov-2018**	29-Apr-2019	✓	**02-Nov-2018**	29-Apr-2019	✓
EG035C: Leachable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035C)							
SRT-BH420-1.0	**31-Oct-2018**	**----**	----	----	**01-Nov-2018**	28-Nov-2018	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
SRT-BH412-0.5, SRT-BH422-0.5, SRT-BH414-0.4, SRT-BH423-0.5, SRT-BH425-0.15	**31-Oct-2018**	**01-Nov-2018**	07-Nov-2018	✓	**01-Nov-2018**	11-Dec-2018	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
SRT-BH421-3.0	**31-Oct-2018**	**01-Nov-2018**	29-Apr-2019	✓	**01-Nov-2018**	29-Apr-2019	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
SRT-BH421-3.0	**31-Oct-2018**	**01-Nov-2018**	29-Apr-2019	✓	**01-Nov-2018**	29-Apr-2019	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
SRT-BH421-3.0	**31-Oct-2018**	**01-Nov-2018**	29-Apr-2019	✓	**01-Nov-2018**	29-Apr-2019	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
SRT-BH421-3.0	**31-Oct-2018**	**01-Nov-2018**	29-Apr-2019	✓	**01-Nov-2018**	29-Apr-2019	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
SRT-BH421-3.0	**31-Oct-2018**	**01-Nov-2018**	29-Apr-2019	✓	**01-Nov-2018**	29-Apr-2019	✓

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	
Method Blanks (MB)							
TCLP for Non & Semivolatile Analytes	EN33a	1	11	9.09	9.09	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Leachable Mercury by FIMS	EG035C	1	9	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Leachable Metals by ICPAES	EG005C	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	7	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	5	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Leachable Mercury by FIMS	EG035C	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Leachable Metals by ICPAES	EG005C	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Leachable Mercury by FIMS	EG035C	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Leachable Metals by ICPAES	EG005C	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Leachable Mercury by FIMS	EG035C	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Leachable Metals by ICPAES	EG005C	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	7	0.00	5.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	5	20.00	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
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 (2013) Schedule B(3)
Leachable Mercury by FIMS	EG035C	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the TCLP solution. The 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 (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In house: Direct injection analysis of fresh waters after dilution (1:1) with methanol. 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. This method complies with the quality control definitions as stated in QSM 5.1. Data is reviewed in line with the DQOs as stated in QSM5.1

Preparation Methods	Method	Matrix	Method Descriptions
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 (2013) Schedule B(3)
TCLP for Non & Semivolatile Analytes	EN33a	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.
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 anaylsis.
Separatory Funnel Extraction of Liquids	ORG14	SOIL	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.

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ALS
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Lab ID Number: *(please quote on correspondence)*

Site: 1791865 – SM TSE

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

Additional Report Formats
NEPM
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DQO
GO, Guidelines ---------
Others _____

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other ___	NO. OF CONTAINERS	ANALYSIS REQUESTED: HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)		EA200N (asbestos NEPM)	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)	Notes/Guidelines/LOR/ Special instructions
1	SRT-BH413A-0.25	28/10/18	X			2	X													
2	SRT-BH413A-0.4	28/10/18	X			2	X													
3	SRT-BH413A-0.5	28/10/18	X			3	X													
4	SRT-BH413A-1.0	28/10/18	X			2	X													
5	SRT-BH413A-1.5	28/10/18	X			2	X	X												
6	SRT-BH413A-2.0	28/10/18	X			2	X	X												
7	SRT-BH413A-2.5	28/10/18	X			1	X													
8	SRT-BH413A-3.0	28/10/18	X			2	X	X												
9	SRT-BH418-0.2	27/10/18	X			2	X													
10	SRT-BH418-0.5	27/10/18	X			2	X													
11	SRT-BH418-1.0	27/10/18	X			2	X													
12	SRT-BH418-1.5	27/10/18	X			3	X	X												
13	SRT-BH418-2.0	27/10/18	X			2	X	X												

Environmental Division
Sydney
Work Order Reference
ES1832159

Telephone : + 61-2-8784 8555

Relinquished By: [signature]	Date/Time: 29/10/18	Received By: [signature] Ass.	Date/Time: 29/10/18
Relinquished By:	Date/Time:	Received By:	Date/Time: 1500 2-2C
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: Yes / *No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD

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Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 / Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)		EA200N (asbestos NEPM)	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	(TRH / BTEXN / PAH / 8 Metals, OCPs/OPPs/PCBs)
14	SRT-BH418-3.0	27/10/18	X			2	X	X											
15	SRT-BH424-0.5	27/10/18	X			2	X												
16	SRT-BH424-1.0	27/10/18	X			3	X												
17	SRT-BH424-1.5	27/10/18	X			2	X	X											
18	SRT-BH424-2.0	27/10/18	X			2	X	X											
19	SRT-BH424-3.0	27/10/18	X			3	X	X											
20	SRT-BH425-0.4	27/10/18	X			1	X												
21	SRT-BH425-0.5	27/10/18	X			2	X												
22	SRT-BH425-1.0	27/10/18	X			2	X												
23	SRT-BH425-1.5	27/10/18	X			3	X												
24	SRT-BH425-2.0	27/10/18	X			2	X	X											
25	SRT-BH425-2.5	27/10/18	X			1	X												
26	SRT-BH425-3.0	27/10/18	X			2	X	X											

Additional Report Formats
NEPM
CSV
ESDAT
DQO
GO, Guidelines --------
_____
Others _____

Notes/Guidelines/LOR/ Special instructions

Relinquished By:	Date/Time: 29/10/18	Received By:	Date/Time: 29/10/18
Relinquished By:	Date/Time:	Received By:	Date/Time: 1500 22°C
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: (Yes) / *No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD

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Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other___	NO. OF CONTAINERS	ANALYSIS REQUESTED: HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)		EA200N (asbestos NEPM)	EILs (pH / CEC \ day content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	(TRH / BTEXN / PAH / 8 Metals, OCPs/OPPs/PCBs)	Additional Report Formats / Notes/Guidelines/LOR/ Special instructions
27	SRT-QCA107	27/10/18	X			1	X													
28	SRT-QCA108	27/10/18	X			1	X													
29	SRT-QCA109	27/10/18	X			1	X													
30	SRT-QCA110	28/10/18	X			1	X													
31	SRT-RB107	27/10/18		X		4	X													
32	SRT-RB110	28/10/18		X		4	X													
33	SRT-TB107		X			1	X													
34	SRT-TS107		X			1	X													
35	Trip Spike Control																			

Additional Report Formats: NEPM, CSV, ESDAT, DQO, GO, Guidelines --------, Others _____

Relinquished By:	Date/Time: 29/10/18	Received By:	Date/Time: 29/10/18
Relinquished By:	Date/Time:	Received By:	Date/Time: 1500 29°
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD

Nur Ezzati Daud

Client Services Officer, Environmental
Sydney

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From: Houston, Barry [mailto:bhouston@golder.com.au]
Sent: Wednesday, 31 October 2018 5:28 PM
To: ALSEnviro Sydney <ALSEnviro.Sydney@ALSGlobal.com>
Cc: Bonetti, Rita <RBonetti@golder.com.au>
Subject:

Hi

We received the SRN today for the COC we sent last night (COC06, ALS # ES1832159).

I attach an updated COC with two changes to the analysis requests:

- ALS# 007 put on hold, and 008 analysed instead (BH413 3.0 m)
- ALS# 025 put on hold, and 024 analysed instead (BH425 2.0 m)

Please let me know if there are any issues,

Kind regards
Barry

Barry Houston (BSc. MSc.)
Senior Environmental Scientist

124 Pacific Highway, St. Leonards, New South Wales 2065, Australia (PO Box 1302, Crows Nest NSW 1585)

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Site: 1791865 – SM TSE

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 / Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	ANALYSIS REQUESTED: HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	PFOS/PFOA	EA200N (asbestos NEPM)	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)
1	SRT-BH413A-0.25	28/10/18	X			2	X												
2	SRT-BH413A-0.4	28/10/18	X			2	X												
3	SRT-BH413A-0.5	28/10/18	X			3			X	X	X	X	X		X				
4	SRT-BH413A-1.0	28/10/18	X			2	X												
5	SRT-BH413A-1.5	28/10/18	X			2		X	X	X		X	X						
6	SRT-BH413A-2.0	28/10/18	X			2	X	X											
7	SRT-BH413A-2.5	28/10/18	X			1	X												
8	SRT-BH413A-3.0	28/10/18	X			2			X								X		
9	SRT-BH418-0.2	27/10/18	X			2			X	X		X	X		X				
10	SRT-BH418-0.5	27/10/18	X			2	X												
11	SRT-BH418-1.0	27/10/18	X			2			X						X				
12	SRT-BH418-1.5	27/10/18	X			3	X	X											
13	SRT-BH418-2.0	27/10/18	X			2	X	X											

Additional Report Formats

- ☐ NEPM
- ✓ CSV
- ✓ ESDAT
- ☐ DQO
- ☐ GO, Guidelines --------
- ☐ Others _____

Notes/Guidelines/LOR/ Special instructions

Relinquished By: Rita Bonetti	Date/Time: 29/10/2018	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD

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Lab ID Number: *(please quote on correspondence)*

Site: 1791865 – SM TSE

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 / Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	PFOS/PFOA	EA200N (asbestos NEPM)	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	(TRH / BTEXN / PAH / 8 Metals, OCPs/OPPs/PCBs)
14	SRT-BH418-3.0	27/10/18	X			2	X										X		
15	SRT-BH424-0.5	27/10/18	X			2			X	X	X	X	X		X				
16	SRT-BH424-1.0	27/10/18	X			3	X		X										
17	SRT-BH424-1.5	27/10/18	X			2	X	X											
18	SRT-BH424-2.0	27/10/18	X			2	X	X											
19	SRT-BH424-3.0	27/10/18	X			3		X	X					X					
20	SRT-BH425-0.4	27/10/18	X			1			X	X		X	X						
21	SRT-BH425-0.5	27/10/18	X			2									X				
22	SRT-BH425-1.0	27/10/18	X			2			X		X								
23	SRT-BH425-1.5	27/10/18	X			3	X												
24	SRT-BH425-2.0	27/10/18	X			2		X	X										
25	SRT-BH425-2.5	27/10/18	X			1	X												
26	SRT-BH425-3.0	27/10/18	X			2	X										X		

Additional Report Formats

- ☐ NEPM
- ✓ CSV
- ✓ ESDAT
- ☐ DQO
- ☐ GO, Guidelines ——————
- ☐ Others ——————

Notes/Guidelines/LOR/ Special instructions

Relinquished By: Rita Bonetti	Date/Time: 29/10/2018	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*
Comments / Subcontracting details: COC Golder review:			

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Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 / Fax:
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	SRT-QCA107	27/10/18	X			1	X													
	SRT-QCA108	27/10/18	X			1			X											
	SRT-QCA109	27/10/18	X			1			X											
	SRT-QCA110	28/10/18	X			1	X													
	SRT-RB107	27/10/18		X		4	X												X	
	SRT-RB110	28/10/18		X		4	X												X	
	SRT-TB107		X			1	X											X		
	SRT-TS107		X			1	X											X		

Additional Report Formats

- ☐ NEPM
- ✓ CSV
- ✓ ESDAT
- ☐ DQO
- ☐ GO, Guidelines --------
- ☐ Others _____

Relinquished By: Rita Bonetti	Date/Time: 29/10/2018	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD

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Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate)			NO. OF CONTAINERS	ANALYSIS REQUESTED													Additional Report Formats / Notes/Guidelines/LOR/ Special instructions
			Soil Sample	Water Sample	Other		HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	PFOS/PFOA	EA200N (asbestos NEPM)	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)	
	SRT-BH413A-0.25	28/10/18	X			2	X													
	SRT-BH413A-0.4	28/10/18	X			2	X													
	SRT-BH413A-0.5	28/10/18	X			3			X	X	X	X	X		X					
	SRT-BH413A-1.0	28/10/18	X			2	X													
	SRT-BH413A-1.5	28/10/18	X			2		X	X	X		X	X							
	SRT-BH413A-2.0	28/10/18	X			2	X	X												
	SRT-BH413A-2.5	28/10/18	X			1	X													
	SRT-BH413A-3.0	28/10/18	X			2			X								X			
	SRT-BH418-0.2	27/10/18	X			2			X	X		X	X		X					
	SRT-BH418-0.5	27/10/18	X			2	X													
	SRT-BH418-1.0	27/10/18	X			2			X						X					
	SRT-BH418-1.5	27/10/18	X			3	X	X												
	SRT-BH418-2.0	27/10/18	X			2	X	X												

Additional Report Formats: NEPM; ✓ CSV; ✓ ESDAT; DQO; GO, Guidelines --------; Others _____

Relinquished By: Rita Bonetti	Date/Time: 29/10/2018	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD

CHAIN OF CUSTODY & ANALYSIS REQUEST | Page __2__ of __3__

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number:*(please quote on correspondence)*

Site: 1791865 – SM TSE

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 / Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	PFOS/PFOA	EA200N (asbestos NEPM)	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	(TRH / BTEXN / PAH / 8 Metals, OCPs/OPPs/PCBs)	Notes/Guidelines/LOR/ Special instructions
	SRT-BH418-3.0	27/10/18	X			2	X										X			
	SRT-BH424-0.5	27/10/18	X			2			X	X	X	X	X		X					
	SRT-BH424-1.0	27/10/18	X			3	X		X											
	SRT-BH424-1.5	27/10/18	X			2	X	X												
	SRT-BH424-2.0	27/10/18	X			2	X	X												
	SRT-BH424-3.0	27/10/18	X			3		X	X					X						
	SRT-BH425-0.4	27/10/18	X			1			X	X		X	X							
	SRT-BH425-0.5	27/10/18	X			2									X					
	SRT-BH425-1.0	27/10/18	X			2			X		X									
	SRT-BH425-1.5	27/10/18	X			3	X													
	SRT-BH425-2.0	27/10/18	X			2		X	X											
	SRT-BH425-2.5	27/10/18	X			1	X													
	SRT-BH425-3.0	27/10/18	X			2	X										X			

Additional Report Formats

NEPM
✓ CSV
✓ ESDAT
DQO
GO, Guidelines ---------
_____
Others _____

Relinquished By: Rita Bonetti	Date/Time: 29/10/2018	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review:

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
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Lab ID Number:*(please quote on correspondence)*

Site: 1791865 – SM TSE

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro		
Address:	124 Pacific Highway	Purchase Order No:			
	St Leonards NSW	Results Required Date:	5 day TAT		
		Telephone:	0437 039 929	Fax:	
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au		
Quotation No:	SY/698/17 C				

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate)			NO. OF CONTAINERS	ANALYSIS REQUESTED												Additional Report Formats / Notes/Guidelines/LOR/ Special instructions
			Soil Sample	Water Sample	Other____		HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	PFOS/PFOA	EA200N (asbestos NEPM)	ElLs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	(TRH / BTEXN / PAH / 8 Metals, OCPs/OPPs/PCBs)	
	SRT-QCA107	27/10/18	X			1	X													
	SRT-QCA108	27/10/18	X			1			X											
	SRT-QCA109	27/10/18	X			1			X											
	SRT-QCA110	28/10/18	X			1	X													
	SRT-RB107	27/10/18		X		4	X												X	
	SRT-RB110	28/10/18		X		4	X												X	
	SRT-TB107		X			1	X											X		
	SRT-TS107		X			1	X											X		

Additional Report Formats: NEPM; ✓ CSV; ✓ ESDAT; DQO; GO, Guidelines --------; _____; Others _____

Relinquished By: Rita Bonetti	Date/Time: 29/10/2018	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES1832159**

Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: RBonetti@golder.com.au	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9478 3901	Facsimile	: +61-2-8784 8500
Project	: Sydney Metro	Page	: 1 of 4
Order number	:	Quote number	: ES2017GOLASS0019 (SY/698/17 C V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: 1791865 - SM TSE		
Sampler	:		

Dates

Date Samples Received	: 29-Oct-2018 15:00	Issue Date	: 31-Oct-2018
Client Requested Due Date	: 06-Nov-2018	Scheduled Reporting Date	: **06-Nov-2018**

Delivery Details

Mode of Delivery	: Pickup	Security Seal	: Intact.
No. of coolers/boxes	: 5	Temperature	: 2.2 - Ice present
Receipt Detail	:	No. of samples received / analysed	: 35 / 22

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please 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 absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- SPOCAS analysis to be conducted by ALS Brisbane.
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.

Sample Container(s)/Preservation Non-Compliances

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

Method Client sample ID	Sample Container Received	Preferred Sample Container for Analysis
PAH/Phenols (SIM) : EP075(SIM)		
SRT-BH413A-2.5	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
SRT-BH425-2.5	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
Total Mercury by FIMS : EG035T		
SRT-BH413A-2.5	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
SRT-BH425-2.5	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
TRH - Semivolatile Fraction : EP071		
SRT-BH413A-2.5	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
SRT-BH425-2.5	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
TRH Volatiles/BTEX : EP080		
SRT-BH413A-2.5	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved
SRT-BH425-2.5	- HDPE Soil Jar	- Soil Glass Jar - Unpreserved

Summary of Sample(s) and Requested Analysis

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

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP035G (solids) Total Phenol by Discrete Analyser	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - S-12 OC/OP Pesticides	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES1832159-001	28-Oct-2018 00:00	SRT-BH413A_0.25	✓						
ES1832159-002	28-Oct-2018 00:00	SRT-BH413A-0.4	✓						
ES1832159-003	28-Oct-2018 00:00	SRT-BH413A-0.5		✓	✓	✓	✓	✓	✓
ES1832159-004	28-Oct-2018 00:00	SRT-BH413A-1.0	✓						
ES1832159-005	28-Oct-2018 00:00	SRT-BH413A-1.5		✓	✓	✓		✓	✓
ES1832159-006	28-Oct-2018 00:00	SRT-BH413A-2.0	✓						
ES1832159-007	28-Oct-2018 00:00	SRT-BH413A-2.5		✓					✓
ES1832159-009	27-Oct-2018 00:00	SRT-BH418-0.2		✓	✓	✓	✓	✓	✓
ES1832159-010	27-Oct-2018 00:00	SRT-BH418-0.5	✓						
ES1832159-011	27-Oct-2018 00:00	SRT-BH418-1.0		✓					✓
ES1832159-012	27-Oct-2018 00:00	SRT-BH418-1.5	✓						
ES1832159-013	27-Oct-2018 00:00	SRT-BH418-2.0	✓						
ES1832159-015	27-Oct-2018 00:00	SRT-BH424-0.5		✓	✓	✓	✓	✓	✓
ES1832159-016	27-Oct-2018 00:00	SRT-BH424-1.0		✓					✓
ES1832159-017	27-Oct-2018 00:00	SRT-BH424-1.5	✓						
ES1832159-018	27-Oct-2018 00:00	SRT-BH424-2.0	✓						
ES1832159-019	27-Oct-2018 00:00	SRT-BH424-3.0		✓					✓
ES1832159-020	27-Oct-2018 00:00	SRT-BH425-0.4		✓	✓	✓		✓	✓
ES1832159-022	27-Oct-2018 00:00	SRT-BH425-1.0		✓			✓		✓
ES1832159-023	27-Oct-2018 00:00	SRT-BH425-1.5	✓						
ES1832159-024	27-Oct-2018 00:00	SRT-BH425-2.0	✓						
ES1832159-025	27-Oct-2018 00:00	SRT-BH425-2.5		✓					✓
ES1832159-027	27-Oct-2018 00:00	SRT-QCA107	✓						
ES1832159-028	27-Oct-2018 00:00	SRT-QCA108		✓					✓
ES1832159-029	27-Oct-2018 00:00	SRT-QCA109		✓					✓

			(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP035G (solids) Total Phenol by Discrete Analyser	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - S-12 OC/OP Pesticides	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES1832159-030	28-Oct-2018 00:00	SRT-QCA110	✓						

Matrix: **SOIL**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	SOIL - EA029 SPOCAS	SOIL - EA200N Asbestos in Soils - (<1kg samples ONLY)	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - S-18 TRH(C6-C9)/BTEXN
ES1832159-003	28-Oct-2018 00:00	SRT-BH413A-0.5		✓		
ES1832159-008	28-Oct-2018 00:00	SRT-BH413A-3.0	✓			
ES1832159-009	27-Oct-2018 00:00	SRT-BH418-0.2		✓		
ES1832159-011	27-Oct-2018 00:00	SRT-BH418-1.0		✓		
ES1832159-014	27-Oct-2018 00:00	SRT-BH418-3.0	✓			
ES1832159-015	27-Oct-2018 00:00	SRT-BH424-0.5		✓		
ES1832159-019	27-Oct-2018 00:00	SRT-BH424-3.0			✓	
ES1832159-021	27-Oct-2018 00:00	SRT-BH425-0.5		✓		
ES1832159-026	27-Oct-2018 00:00	SRT-BH425-3.0	✓			
ES1832159-033	26-Oct-2018 00:00	SRT-TB107				✓
ES1832159-034	22-Oct-2018 00:00	SRT-TS107				✓
ES1832159-035	22-Oct-2018 00:00	Trip Spike Control				✓

Matrix: **WATER**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	WATER - W-16T TRH/BTEXN/PAH/OC/OP/PCB/8 Total metals
ES1832159-031	27-Oct-2018 00:00	SRT-RB107	✓
ES1832159-032	28-Oct-2018 00:00	SRT-RB110	✓

Proactive Holding Time Report

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

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	au_accountspayable@golder.com.au

BARRY HOUSTON

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

RITA BONETTI

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

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1832159**	Page	: 1 of 39
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 29-Oct-2018 15:00
Order number	: .	Date Analysis Commenced	: 01-Nov-2018
C-O-C number	: ----	Issue Date	: 06-Nov-2018 18:00
Sampler	: ----		
Site	: 1791865 - SM TSE		
Quote number	: SY/698/17 C V4		
No. of samples received	: 35		
No. of samples analysed	: 23		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive 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*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini		Sydney Organics, Smithfield, NSW
Gerrad Morgan	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Satishkumar Trivedi	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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.

- EP231: Matrix spike bias high due to internal standard suppression from matrix interference
- ASS: EA029 (SPOCAS): Retained Acidity not required because pH KCl greater than or equal to 4.5
- EP075(SIM): Poor duplicate precision due to sample heterogeneity. Confirmed by re-extraction and re-analysis.
- ASS: EA029 (SPOCAS): Excess ANC not required because pH OX less than 6.5.
- EP080: The trip spike and its control have been analysed for volatile TPH and BTEX only. The trip spike and control were prepared in the lab using reagent grade sand spiked with petrol. The spike was dispatched from the lab and the control retained.
- EP075(SIM): Particular samples required dilution prior to extraction due to matrix interferences. LOR values have been adjusted accordingly.
- EP068: Particular samples required dilution due to matrix interferences. LOR values have been adjusted accordingly.
- EP066 : Particular samples # ES1832159_020 required dilution due to sample matrix . LOR values have been adjusted accordingly.
- EA200N: Asbestos weights and percentages are not covered under the Scope of NATA Accreditation.
  Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present)
  The Asbestos (Fines and Fibrous) weight is calculated from the extracted Fibrous Asbestos and Asbestos Fines as an equivalent weight of 100% Asbestos
  Percentages for Asbestos content in ACM are based on the 2013 NEPM default values.
  All calculations of percentage Asbestos under this method are approximate and should be used as a guide only.
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime ($CaCO_3$) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m3 in-situ soil, multiply reported results x wet bulk density of soil in t/m3.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.
- EA200N: ALS laboratory procedures and methods used for the identification and quantitation of asbestos are consistent with AS4964-2004 and the requirements of the 2013 NEPM for Assessment of Site Contamination

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH413A-0.5	SRT-BH413A-1.5	SRT-BH413A-2.5	SRT-BH413A-3.0	SRT-BH418-0.2
			Client sampling date / time	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1832159-003	ES1832159-005	ES1832159-007	ES1832159-008	ES1832159-009
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	----	----	----	**6.6**	----
pH OX (23B)	----	0.1	pH Unit	----	----	----	**4.8**	----
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	----	----	<2	----
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	----	----	**5**	----
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	----	----	**5**	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	----	----	<0.020	----
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	----	----	<0.020	----
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	----	----	<0.020	----
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	----	----	<0.020	----
Peroxide Sulfur (23De)	----	0.020	% S	----	----	----	<0.020	----
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	----	----	<0.020	----
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	----	----	<10	----
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	----	----	<0.020	----
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	----	----	<0.020	----
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	----	----	<0.020	----
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	----	----	<10	----
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	----	----	<0.020	----
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	----	----	<0.020	----
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	----	----	<0.020	----
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	----	----	<0.020	----
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	----	----	<10	----
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	----	----	<0.020	----
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	----	----	**1.5**	----
Net Acidity (sulfur units)	----	0.02	% S	----	----	----	<0.02	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	----	<10	----
Liming Rate	----	1	kg CaCO3/t	----	----	----	<1	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH413A-0.5	SRT-BH413A-1.5	SRT-BH413A-2.5	SRT-BH413A-3.0	SRT-BH418-0.2
			Client sampling date / time	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1832159-003	ES1832159-005	ES1832159-007	ES1832159-008	ES1832159-009
				Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued								
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	----	----	<0.02	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	----	----	<10	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	----	----	<1	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**11.3**	**9.7**	----	**3.9**	**9.4**
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	----	----	----	**No**
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	----	----	----	**No**
Asbestos Type	1332-21-4	-	--	**-**	----	----	----	**-**
Sample weight (dry)	----	0.01	g	**521**	----	----	----	**517**
APPROVED IDENTIFIER:	----	-	--	**G.MORGAN**	----	----	----	**G.MORGAN**
EA200N: Asbestos Quantification (non-NATA)								
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	<0.0004	----	----	----	<0.0004
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	<0.001	----	----	----	<0.001
ø Asbestos Containing Material	1332-21-4	0.1	g	<0.1	----	----	----	<0.1
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)	<0.01	----	----	----	<0.01
ø Weight Used for % Calculation	----	0.0001	kg	**0.521**	----	----	----	**0.517**
ø Fibrous Asbestos >7mm	----	0.0004	g	<0.0004	----	----	----	<0.0004
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**10**	<5	----	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	<1	<1
Chromium	7440-47-3	2	mg/kg	**8**	**3**	----	<2	**11**
Copper	7440-50-8	5	mg/kg	**72**	<5	----	<5	**63**
Lead	7439-92-1	5	mg/kg	**580**	**11**	----	<5	<5
Nickel	7440-02-0	2	mg/kg	**10**	<2	----	<2	**30**
Zinc	7440-66-6	5	mg/kg	**314**	**10**	----	<5	**36**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	**1.3**	<0.1	----	<0.1	<0.1
EP035G: Total Phenol by Discrete Analyser								
Phenols (Total)	----	1	mg/kg	<1	<1	----	----	<1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	----	----	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH413A-0.5	SRT-BH413A-1.5	SRT-BH413A-2.5	SRT-BH413A-3.0	SRT-BH418-0.2
			Client sampling date / time	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1832159-003	ES1832159-005	ES1832159-007	ES1832159-008	ES1832159-009
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	----	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	----	----	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	----	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	----	----	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	----	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH413A-0.5	SRT-BH413A-1.5	SRT-BH413A-2.5	SRT-BH413A-3.0	SRT-BH418-0.2
				Client sampling date / time	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832159-003	ES1832159-005	ES1832159-007	ES1832159-008	ES1832159-009
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	----	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	0.5	mg/kg		<0.5	----	----	----	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg		<0.5	----	----	----	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg		<0.5	----	----	----	<0.5
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		<0.5	----	----	----	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg		<0.5	----	----	----	<0.5
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		<0.5	----	----	----	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg		<0.5	----	----	----	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg		<0.5	----	----	----	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg		<0.5	----	----	----	<0.5
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		<5	----	----	----	<5
2-Butanone (MEK)	78-93-3	5	mg/kg		<5	----	----	----	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		<5	----	----	----	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg		<5	----	----	----	<5
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		<0.5	----	----	----	<0.5
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		<0.5	----	----	----	<0.5
1.2-Dichloropropane	78-87-5	0.5	mg/kg		<0.5	----	----	----	<0.5
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		<0.5	----	----	----	<0.5
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		<0.5	----	----	----	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		<0.5	----	----	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH413A-0.5	SRT-BH413A-1.5	SRT-BH413A-2.5	SRT-BH413A-3.0	SRT-BH418-0.2
				Client sampling date / time	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832159-003	ES1832159-005	ES1832159-007	ES1832159-008	ES1832159-009
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		<5	----	----	----	<5
Chloromethane	74-87-3	5	mg/kg		<5	----	----	----	<5
Vinyl chloride	75-01-4	5	mg/kg		<5	----	----	----	<5
Bromomethane	74-83-9	5	mg/kg		<5	----	----	----	<5
Chloroethane	75-00-3	5	mg/kg		<5	----	----	----	<5
Trichlorofluoromethane	75-69-4	5	mg/kg		<5	----	----	----	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg		<0.5	----	----	----	<0.5
Iodomethane	74-88-4	0.5	mg/kg		<0.5	----	----	----	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		<0.5	----	----	----	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg		<0.5	----	----	----	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		<0.5	----	----	----	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		<0.5	----	----	----	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		<0.5	----	----	----	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg		<0.5	----	----	----	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg		<0.5	----	----	----	<0.5
Trichloroethene	79-01-6	0.5	mg/kg		<0.5	----	----	----	<0.5
Dibromomethane	74-95-3	0.5	mg/kg		<0.5	----	----	----	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		<0.5	----	----	----	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg		<0.5	----	----	----	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg		<0.5	----	----	----	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		<0.5	----	----	----	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		<0.5	----	----	----	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		<0.5	----	----	----	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		<0.5	----	----	----	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		<0.5	----	----	----	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg		<0.5	----	----	----	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		<0.5	----	----	----	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg		<0.5	----	----	----	<0.5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		<0.5	----	----	----	<0.5
Bromobenzene	108-86-1	0.5	mg/kg		<0.5	----	----	----	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg		<0.5	----	----	----	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg		<0.5	----	----	----	<0.5
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		<0.5	----	----	----	<0.5
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		<0.5	----	----	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH413A-0.5	SRT-BH413A-1.5	SRT-BH413A-2.5	SRT-BH413A-3.0	SRT-BH418-0.2
				Client sampling date / time	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832159-003	ES1832159-005	ES1832159-007	ES1832159-008	ES1832159-009
					Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued									
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		<0.5	----	----	----	<0.5
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		<0.5	----	----	----	<0.5
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		<0.5	----	----	----	<0.5
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		<0.5	----	----	----	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg		<0.5	----	----	----	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg		<0.5	----	----	----	<0.5
Bromoform	75-25-2	0.5	mg/kg		<0.5	----	----	----	<0.5
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		<1	----	----	----	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		**0.9**	<0.5	----	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		**1.0**	<0.5	----	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		**0.6**	<0.5	----	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		**0.6**	<0.5	----	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		**0.7**	<0.5	----	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		**0.6**	<0.5	----	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		**4.4**	<0.5	----	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		**0.7**	<0.5	----	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**1.0**	**0.6**	----	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.3**	**1.2**	----	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	----	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	----	<50	<50

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH413A-0.5	SRT-BH413A-1.5	SRT-BH413A-2.5	SRT-BH413A-3.0	SRT-BH418-0.2
				Client sampling date / time	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832159-003	ES1832159-005	ES1832159-007	ES1832159-008	ES1832159-009
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	mg/kg		<100	<100	----	<100	**100**
C29 - C36 Fraction	----	100	mg/kg		<100	<100	----	<100	**130**
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	----	<50	**230**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	----	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	----	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	----	<100	**210**
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	----	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	----	<50	**210**
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	----	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**106**	**114**	----	----	**94.4**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**113**	**135**	----	----	**114**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**60.7**	**71.7**	----	----	**65.5**
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		**85.3**	----	----	----	**96.2**
Toluene-D8	2037-26-5	0.5	%		**83.3**	----	----	----	**92.1**
4-Bromofluorobenzene	460-00-4	0.5	%		**86.1**	----	----	----	**92.5**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**73.9**	**78.3**	----	**85.2**	**71.9**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH413A-0.5	SRT-BH413A-1.5	SRT-BH413A-2.5	SRT-BH413A-3.0	SRT-BH418-0.2
				Client sampling date / time	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832159-003	ES1832159-005	ES1832159-007	ES1832159-008	ES1832159-009
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2-Chlorophenol-D4	93951-73-6	0.5	%		77.3	82.9	----	85.0	65.1
2.4.6-Tribromophenol	118-79-6	0.5	%		60.5	61.1	----	51.8	24.0
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		82.0	88.3	----	91.4	81.2
Anthracene-d10	1719-06-8	0.5	%		85.2	92.0	----	85.5	84.6
4-Terphenyl-d14	1718-51-0	0.5	%		79.0	86.4	----	95.1	80.6
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		87.4	96.5	97.7	98.8	98.6
Toluene-D8	2037-26-5	0.2	%		88.1	84.2	86.2	83.2	96.7
4-Bromofluorobenzene	460-00-4	0.2	%		90.4	86.6	86.9	84.8	95.0

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH418-1.0	SRT-BH418-3.0	SRT-BH424-0.5	SRT-BH424-1.0	SRT-BH424-3.0
			Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1832159-011	ES1832159-014	ES1832159-015	ES1832159-016	ES1832159-019
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	----	**5.8**	----	----	----
pH OX (23B)	----	0.1	pH Unit	----	**4.8**	----	----	----
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	**4**	----	----	----
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	**12**	----	----	----
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	**7**	----	----	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	<0.020	----	----	----
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	<0.020	----	----	----
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	<0.020	----	----	----
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	<0.020	----	----	----
Peroxide Sulfur (23De)	----	0.020	% S	----	<0.020	----	----	----
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	<0.020	----	----	----
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	<10	----	----	----
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	<0.020	----	----	----
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	<0.020	----	----	----
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	<0.020	----	----	----
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	<10	----	----	----
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	<0.020	----	----	----
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	<0.020	----	----	----
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	<0.020	----	----	----
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	<0.020	----	----	----
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	<10	----	----	----
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	<0.020	----	----	----
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	**1.5**	----	----	----
Net Acidity (sulfur units)	----	0.02	% S	----	<0.02	----	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	<10	----	----	----
Liming Rate	----	1	kg CaCO3/t	----	<1	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH418-1.0	SRT-BH418-3.0	SRT-BH424-0.5	SRT-BH424-1.0	SRT-BH424-3.0
			Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1832159-011	ES1832159-014	ES1832159-015	ES1832159-016	ES1832159-019
				Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued								
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	<0.02	----	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	<10	----	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	<1	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	4.4	----	10.3	12.3	3.1
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	No	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	No	----	No	----	----
Asbestos Type	1332-21-4	-	--	-	----	-	----	----
Sample weight (dry)	----	0.01	g	638	----	706	----	----
APPROVED IDENTIFIER:	----	-	--	G.MORGAN	----	G.MORGAN	----	----
EA200N: Asbestos Quantification (non-NATA)								
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	<0.0004	----	<0.0004	----	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	<0.001	----	<0.001	----	----
ø Asbestos Containing Material	1332-21-4	0.1	g	<0.1	----	<0.1	----	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)	<0.01	----	<0.01	----	----
ø Weight Used for % Calculation	----	0.0001	kg	0.638	----	0.706	----	----
ø Fibrous Asbestos >7mm	----	0.0004	g	<0.0004	----	<0.0004	----	----
EG005T: 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	<2	----	3	4	<2
Copper	7440-50-8	5	mg/kg	<5	----	10	22	<5
Lead	7439-92-1	5	mg/kg	<5	----	186	104	<5
Nickel	7440-02-0	2	mg/kg	<2	----	<2	5	<2
Zinc	7440-66-6	5	mg/kg	<5	----	75	67	8
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	0.2	0.1	<0.1
EP035G: Total Phenol by Discrete Analyser								
Phenols (Total)	----	1	mg/kg	----	----	<1	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	<0.1	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH418-1.0	SRT-BH418-3.0	SRT-BH424-0.5	SRT-BH424-1.0	SRT-BH424-3.0
			Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1832159-011	ES1832159-014	ES1832159-015	ES1832159-016	ES1832159-019
				Result	Result	Result	Result	Result
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	----	----
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	72-54-8/72-55-9/50-2	0.05	mg/kg	----	----	<0.05	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	----	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg	----	----	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg	----	----	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg	----	----	<0.05	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH418-1.0	SRT-BH418-3.0	SRT-BH424-0.5	SRT-BH424-1.0	SRT-BH424-3.0
				Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832159-011	ES1832159-014	ES1832159-015	ES1832159-016	ES1832159-019
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Fenthion	55-38-9	0.05	mg/kg		----	----	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg		----	----	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg		----	----	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg		----	----	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg		----	----	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	<0.05	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	0.5	mg/kg		----	----	<0.5	----	----
Isopropylbenzene	98-82-8	0.5	mg/kg		----	----	<0.5	----	----
n-Propylbenzene	103-65-1	0.5	mg/kg		----	----	<0.5	----	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		----	----	<0.5	----	----
sec-Butylbenzene	135-98-8	0.5	mg/kg		----	----	<0.5	----	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		----	----	<0.5	----	----
tert-Butylbenzene	98-06-6	0.5	mg/kg		----	----	<0.5	----	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg		----	----	<0.5	----	----
n-Butylbenzene	104-51-8	0.5	mg/kg		----	----	<0.5	----	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		----	----	<5	----	----
2-Butanone (MEK)	78-93-3	5	mg/kg		----	----	<5	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		----	----	<5	----	----
2-Hexanone (MBK)	591-78-6	5	mg/kg		----	----	<5	----	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		----	----	<0.5	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		----	----	<0.5	----	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		----	----	<0.5	----	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		----	----	<0.5	----	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		----	----	<0.5	----	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		----	----	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH418-1.0	SRT-BH418-3.0	SRT-BH424-0.5	SRT-BH424-1.0	SRT-BH424-3.0
				Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832159-011	ES1832159-014	ES1832159-015	ES1832159-016	ES1832159-019
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		----	----	<5	----	----
Chloromethane	74-87-3	5	mg/kg		----	----	<5	----	----
Vinyl chloride	75-01-4	5	mg/kg		----	----	<5	----	----
Bromomethane	74-83-9	5	mg/kg		----	----	<5	----	----
Chloroethane	75-00-3	5	mg/kg		----	----	<5	----	----
Trichlorofluoromethane	75-69-4	5	mg/kg		----	----	<5	----	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		----	----	<0.5	----	----
Iodomethane	74-88-4	0.5	mg/kg		----	----	<0.5	----	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		----	----	<0.5	----	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		----	----	<0.5	----	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		----	----	<0.5	----	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		----	----	<0.5	----	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		----	----	<0.5	----	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		----	----	<0.5	----	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		----	----	<0.5	----	----
Trichloroethene	79-01-6	0.5	mg/kg		----	----	<0.5	----	----
Dibromomethane	74-95-3	0.5	mg/kg		----	----	<0.5	----	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		----	----	<0.5	----	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		----	----	<0.5	----	----
Tetrachloroethene	127-18-4	0.5	mg/kg		----	----	<0.5	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		----	----	<0.5	----	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		----	----	<0.5	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		----	----	<0.5	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		----	----	<0.5	----	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		----	----	<0.5	----	----
Pentachloroethane	76-01-7	0.5	mg/kg		----	----	<0.5	----	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		----	----	<0.5	----	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		----	----	<0.5	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		----	----	<0.5	----	----
Bromobenzene	108-86-1	0.5	mg/kg		----	----	<0.5	----	----
2-Chlorotoluene	95-49-8	0.5	mg/kg		----	----	<0.5	----	----
4-Chlorotoluene	106-43-4	0.5	mg/kg		----	----	<0.5	----	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		----	----	<0.5	----	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		----	----	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH418-1.0	SRT-BH418-3.0	SRT-BH424-0.5	SRT-BH424-1.0	SRT-BH424-3.0
				Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832159-011	ES1832159-014	ES1832159-015	ES1832159-016	ES1832159-019
					Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued									
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		----	----	<0.5	----	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		----	----	<0.5	----	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		----	----	<0.5	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		----	----	<0.5	----	----
Bromodichloromethane	75-27-4	0.5	mg/kg		----	----	<0.5	----	----
Dibromochloromethane	124-48-1	0.5	mg/kg		----	----	<0.5	----	----
Bromoform	75-25-2	0.5	mg/kg		----	----	<0.5	----	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		----	----	<1	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	----	<50	<50	<50

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH418-1.0	SRT-BH418-3.0	SRT-BH424-0.5	SRT-BH424-1.0	SRT-BH424-3.0
				Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832159-011	ES1832159-014	ES1832159-015	ES1832159-016	ES1832159-019
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	mg/kg		<100	----	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	----	<100	<100	<100
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		<50	----	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	<10	<10
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	----	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	----	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	----	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	----	<100	<100	<100
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	----	<50	<50	<50
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	----	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	----	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	<1	<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		----	----	----	----	<0.0002
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		----	----	----	----	<0.0002

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH418-1.0	SRT-BH418-3.0	SRT-BH424-0.5	SRT-BH424-1.0	SRT-BH424-3.0
				Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832159-011	ES1832159-014	ES1832159-015	ES1832159-016	ES1832159-019
					Result	Result	Result	Result	Result
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		----	----	----	----	<0.0002
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 (PFTrDA)	72629-94-8	0.0002	mg/kg		----	----	----	----	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		----	----	----	----	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		----	----	----	----	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		----	----	----	----	<0.0005
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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH418-1.0	SRT-BH418-3.0	SRT-BH424-0.5	SRT-BH424-1.0	SRT-BH424-3.0
				Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832159-011	ES1832159-014	ES1832159-015	ES1832159-016	ES1832159-019
					Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued									
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		----	----	----	----	<0.0002
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	----	----	----	<0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	----	----	----	<0.0002
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	96.4	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	136	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	72.2	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		----	----	92.5	----	----
Toluene-D8	2037-26-5	0.5	%		----	----	83.6	----	----
4-Bromofluorobenzene	460-00-4	0.5	%		----	----	84.8	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		72.4	----	75.5	73.3	69.1
2-Chlorophenol-D4	93951-73-6	0.5	%		76.1	----	78.4	76.4	72.3
2.4.6-Tribromophenol	118-79-6	0.5	%		50.5	----	57.9	56.0	37.2
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		82.0	----	85.7	83.3	80.6
Anthracene-d10	1719-06-8	0.5	%		86.4	----	86.4	82.0	83.5
4-Terphenyl-d14	1718-51-0	0.5	%		80.5	----	83.8	80.2	80.9
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		99.8	----	95.2	95.6	94.5
Toluene-D8	2037-26-5	0.2	%		95.0	----	87.1	84.1	84.4
4-Bromofluorobenzene	460-00-4	0.2	%		91.5	----	88.4	84.6	85.9
EP231S: PFAS Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH418-1.0	SRT-BH418-3.0	SRT-BH424-0.5	SRT-BH424-1.0	SRT-BH424-3.0
				Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832159-011	ES1832159-014	ES1832159-015	ES1832159-016	ES1832159-019
					Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued									
13C4-PFOS	----	0.0002	%		**----**	**----**	**----**	**----**	**73.0**
13C8-PFOA	----	0.0002	%		**----**	**----**	**----**	**----**	**82.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH425-0.4	SRT-BH425-0.5	SRT-BH425-1.0	SRT-BH425-2.0	SRT-BH425-2.5
			Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1832159-020	ES1832159-021	ES1832159-022	ES1832159-024	ES1832159-025
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	11.6	----	4.5	3.6	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	No	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	----	No	----	----	----
Asbestos Type	1332-21-4	-	--	----	-	----	----	----
Sample weight (dry)	----	0.01	g	----	311	----	----	----
APPROVED IDENTIFIER:	----	-	--	----	G.MORGAN	----	----	----
EA200N: Asbestos Quantification (non-NATA)								
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	----	<0.0004	----	----	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	----	<0.001	----	----	----
ø Asbestos Containing Material	1332-21-4	0.1	g	----	<0.1	----	----	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)	----	<0.01	----	----	----
ø Weight Used for % Calculation	----	0.0001	kg	----	0.311	----	----	----
ø Fibrous Asbestos >7mm	----	0.0004	g	----	<0.0004	----	----	----
EG005T: Total Metals by ICP-AES								
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	4	----	2	<2	----
Copper	7440-50-8	5	mg/kg	85	----	33	<5	----
Lead	7439-92-1	5	mg/kg	345	----	123	<5	----
Nickel	7440-02-0	2	mg/kg	7	----	2	<2	----
Zinc	7440-66-6	5	mg/kg	150	----	79	<5	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	1.0	----	0.2	<0.1	----
EP035G: Total Phenol by Discrete Analyser								
Phenols (Total)	----	1	mg/kg	6	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.2	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<2.50	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<2.50	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<2.50	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH425-0.4	SRT-BH425-0.5	SRT-BH425-1.0	SRT-BH425-2.0	SRT-BH425-2.5
				Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832159-020	ES1832159-021	ES1832159-022	ES1832159-024	ES1832159-025
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
gamma-BHC	58-89-9	0.05	mg/kg		<2.50	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		<2.50	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		<2.50	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg		<2.50	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<2.50	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.80	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<2.50	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<2.50	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<2.50	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		<2.50	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		<2.50	----	----	----	----
Endrin	72-20-8	0.05	mg/kg		<2.50	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<2.50	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<1.50	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		<2.50	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<2.50	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<2.50	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		<10.0	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<2.50	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<10.0	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.80	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		<0.80	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<2.50	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<2.50	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<10.0	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		<2.50	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg		<2.50	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<2.50	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<10.0	----	----	----	----
Malathion	121-75-5	0.05	mg/kg		<2.50	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg		<2.50	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<2.50	----	----	----	----
Parathion	56-38-2	0.2	mg/kg		<10.0	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH425-0.4	SRT-BH425-0.5	SRT-BH425-1.0	SRT-BH425-2.0	SRT-BH425-2.5
				Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832159-020	ES1832159-021	ES1832159-022	ES1832159-024	ES1832159-025
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<2.50	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<2.50	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<2.50	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<2.50	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<2.50	----	----	----	----
Ethion	563-12-2	0.05	mg/kg		<2.50	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<2.50	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<2.50	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	0.5	mg/kg		----	----	<0.5	----	----
Isopropylbenzene	98-82-8	0.5	mg/kg		----	----	<0.5	----	----
n-Propylbenzene	103-65-1	0.5	mg/kg		----	----	<0.5	----	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		----	----	<0.5	----	----
sec-Butylbenzene	135-98-8	0.5	mg/kg		----	----	<0.5	----	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		----	----	<0.5	----	----
tert-Butylbenzene	98-06-6	0.5	mg/kg		----	----	<0.5	----	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg		----	----	<0.5	----	----
n-Butylbenzene	104-51-8	0.5	mg/kg		----	----	<0.5	----	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		----	----	<5	----	----
2-Butanone (MEK)	78-93-3	5	mg/kg		----	----	<5	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		----	----	<5	----	----
2-Hexanone (MBK)	591-78-6	5	mg/kg		----	----	<5	----	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		----	----	<0.5	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		----	----	<0.5	----	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		----	----	<0.5	----	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		----	----	<0.5	----	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		----	----	<0.5	----	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		----	----	<0.5	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		----	----	<5	----	----
Chloromethane	74-87-3	5	mg/kg		----	----	<5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH425-0.4	SRT-BH425-0.5	SRT-BH425-1.0	SRT-BH425-2.0	SRT-BH425-2.5
			Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1832159-020	ES1832159-021	ES1832159-022	ES1832159-024	ES1832159-025
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued								
Vinyl chloride	75-01-4	5	mg/kg	----	----	<5	----	----
Bromomethane	74-83-9	5	mg/kg	----	----	<5	----	----
Chloroethane	75-00-3	5	mg/kg	----	----	<5	----	----
Trichlorofluoromethane	75-69-4	5	mg/kg	----	----	<5	----	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg	----	----	<0.5	----	----
Iodomethane	74-88-4	0.5	mg/kg	----	----	<0.5	----	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	----	----	<0.5	----	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg	----	----	<0.5	----	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	----	----	<0.5	----	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	----	----	<0.5	----	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg	----	----	<0.5	----	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg	----	----	<0.5	----	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg	----	----	<0.5	----	----
Trichloroethene	79-01-6	0.5	mg/kg	----	----	<0.5	----	----
Dibromomethane	74-95-3	0.5	mg/kg	----	----	<0.5	----	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	----	----	<0.5	----	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg	----	----	<0.5	----	----
Tetrachloroethene	127-18-4	0.5	mg/kg	----	----	<0.5	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	----	----	<0.5	----	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	----	----	<0.5	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	----	----	<0.5	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	----	----	<0.5	----	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	----	----	<0.5	----	----
Pentachloroethane	76-01-7	0.5	mg/kg	----	----	<0.5	----	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	----	----	<0.5	----	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg	----	----	<0.5	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	0.5	mg/kg	----	----	<0.5	----	----
Bromobenzene	108-86-1	0.5	mg/kg	----	----	<0.5	----	----
2-Chlorotoluene	95-49-8	0.5	mg/kg	----	----	<0.5	----	----
4-Chlorotoluene	106-43-4	0.5	mg/kg	----	----	<0.5	----	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	----	----	<0.5	----	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	----	----	<0.5	----	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	----	----	<0.5	----	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	----	----	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH425-0.4	SRT-BH425-0.5	SRT-BH425-1.0	SRT-BH425-2.0	SRT-BH425-2.5
				Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832159-020	ES1832159-021	ES1832159-022	ES1832159-024	ES1832159-025
					Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued									
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		----	----	<0.5	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		----	----	<0.5	----	----
Bromodichloromethane	75-27-4	0.5	mg/kg		----	----	<0.5	----	----
Dibromochloromethane	124-48-1	0.5	mg/kg		----	----	<0.5	----	----
Bromoform	75-25-2	0.5	mg/kg		----	----	<0.5	----	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		----	----	3	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		111	----	0.9	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		142	----	0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		32.4	----	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		154	----	0.6	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		777	----	2.9	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		228	----	0.7	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		860	----	2.8	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		764	----	2.4	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		374	----	0.9	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		323	----	0.8	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		378	----	0.6	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		150	----	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		320	----	0.9	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		128	----	<0.5	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		44.8	----	<0.5	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		134	----	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		4920	----	14.0	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		472	----	1.0	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		472	----	1.4	0.6	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		472	----	1.7	1.2	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		13	----	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg		960	----	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg		17300	----	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg		8810	----	<100	<100	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH425-0.4	SRT-BH425-0.5	SRT-BH425-1.0	SRT-BH425-2.0	SRT-BH425-2.5
				Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832159-020	ES1832159-021	ES1832159-022	ES1832159-024	ES1832159-025
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
^ C10 - C36 Fraction (sum)	----	50	mg/kg		27100	----	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		18	----	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		11	----	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg		2140	----	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg		23600	----	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg		4620	----	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		30400	----	<50	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		2090	----	<50	<50	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		1.8	----	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		2.8	----	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		1.8	----	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		0.5	----	<0.5	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg		6.9	----	<0.2	<0.2	----
^ Total Xylenes	----	0.5	mg/kg		2.3	----	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg		49	----	3	<1	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		74.0	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		79.8	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		61.1	----	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		----	----	89.4	----	----
Toluene-D8	2037-26-5	0.5	%		----	----	81.9	----	----
4-Bromofluorobenzene	460-00-4	0.5	%		----	----	85.0	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		74.7	----	70.8	89.1	----
2-Chlorophenol-D4	93951-73-6	0.5	%		75.3	----	75.7	90.0	----
2.4.6-Tribromophenol	118-79-6	0.5	%		61.6	----	61.1	49.6	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH425-0.4	SRT-BH425-0.5	SRT-BH425-1.0	SRT-BH425-2.0	SRT-BH425-2.5
				Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832159-020	ES1832159-021	ES1832159-022	ES1832159-024	ES1832159-025
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**88.6**	**----**	**80.0**	**92.6**	**----**
Anthracene-d10	1719-06-8	0.5	%		**93.1**	**----**	**84.5**	**87.3**	**----**
4-Terphenyl-d14	1718-51-0	0.5	%		**110**	**----**	**84.2**	**96.6**	**----**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**99.4**	**----**	**92.0**	**101**	**104**
Toluene-D8	2037-26-5	0.2	%		**98.4**	**----**	**85.9**	**91.0**	**87.2**
4-Bromofluorobenzene	460-00-4	0.2	%		**98.6**	**----**	**87.8**	**85.8**	**84.1**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH425-3.0	SRT-QCA108	SRT-QCA109	SRT-TB107	SRT-TS107
			Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	26-Oct-2018 00:00	22-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1832159-026	ES1832159-028	ES1832159-029	ES1832159-033	ES1832159-034
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	5.8	----	----	----	----
pH OX (23B)	----	0.1	pH Unit	4.8	----	----	----	----
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	2	----	----	----	----
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	7	----	----	----	----
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	5	----	----	----	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	<0.020	----	----	----	----
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	<0.020	----	----	----	----
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	<0.020	----	----	----	----
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	<0.020	----	----	----	----
Peroxide Sulfur (23De)	----	0.020	% S	<0.020	----	----	----	----
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	<0.020	----	----	----	----
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	----	----	----	----
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	<0.020	----	----	----	----
Peroxide Calcium (23Wh)	----	0.020	% Ca	<0.020	----	----	----	----
Acid Reacted Calcium (23X)	----	0.020	% Ca	<0.020	----	----	----	----
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	----	----	----	----
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	<0.020	----	----	----	----
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	<0.020	----	----	----	----
Peroxide Magnesium (23Tm)	----	0.020	% Mg	<0.020	----	----	----	----
Acid Reacted Magnesium (23U)	----	0.020	% Mg	<0.020	----	----	----	----
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	----	----	----	----
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	<0.020	----	----	----	----
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	1.5	----	----	----	----
Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
Liming Rate	----	1	kg CaCO3/t	<1	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH425-3.0	SRT-QCA108	SRT-QCA109	SRT-TB107	SRT-TS107
				Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	26-Oct-2018 00:00	22-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832159-026	ES1832159-028	ES1832159-029	ES1832159-033	ES1832159-034
					Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued									
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		<0.02	----	----	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		<10	----	----	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t		<1	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		----	**11.0**	**5.4**	----	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		----	<5	<5	----	----
Cadmium	7440-43-9	1	mg/kg		----	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg		----	**3**	<2	----	----
Copper	7440-50-8	5	mg/kg		----	**11**	**11**	----	----
Lead	7439-92-1	5	mg/kg		----	**167**	**250**	----	----
Nickel	7440-02-0	2	mg/kg		----	<2	<2	----	----
Zinc	7440-66-6	5	mg/kg		----	**66**	**85**	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		----	**0.2**	**0.1**	----	----
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	**0.9**	----	----
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	**0.9**	----	----
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	205-99-2 205-82-3	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	----	0.5	mg/kg		----	<0.5	**1.8**	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH425-3.0	SRT-QCA108	SRT-QCA109	SRT-TB107	SRT-TS107
				Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	26-Oct-2018 00:00	22-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832159-026	ES1832159-028	ES1832159-029	ES1832159-033	ES1832159-034
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**0.6**	**0.6**	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**1.2**	**1.2**	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	<10	<10	<10	**43**
C10 - C14 Fraction	----	50	mg/kg		----	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg		----	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg		----	<100	<100	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	<10	<10	**58**
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	<10	<10	**30**
>C10 - C16 Fraction	----	50	mg/kg		----	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg		----	<100	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		----	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	<50	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	<50	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	**13.0**
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	<0.5	<0.5	**1.8**
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	**9.5**
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	<0.5	<0.5	**3.9**
^ Sum of BTEX	----	0.2	mg/kg		----	<0.2	<0.2	<0.2	**28.2**
^ Total Xylenes	----	0.5	mg/kg		----	<0.5	<0.5	<0.5	**13.4**
Naphthalene	91-20-3	1	mg/kg		----	<1	<1	<1	<1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	**69.7**	**68.7**	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		----	**73.0**	**72.9**	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		----	**49.2**	**46.7**	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	**80.1**	**77.2**	----	----
Anthracene-d10	1719-06-8	0.5	%		----	**82.7**	**82.0**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH425-3.0	SRT-QCA108	SRT-QCA109	SRT-TB107	SRT-TS107
				Client sampling date / time	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	26-Oct-2018 00:00	22-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832159-026	ES1832159-028	ES1832159-029	ES1832159-033	ES1832159-034
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued									
4-Terphenyl-d14	1718-51-0	0.5	%		**----**	**86.4**	**84.8**	**----**	**----**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**----**	**102**	**109**	**101**	**107**
Toluene-D8	2037-26-5	0.2	%		**----**	**88.4**	**95.9**	**83.9**	**98.8**
4-Bromofluorobenzene	460-00-4	0.2	%		**----**	**84.2**	**93.0**	**84.9**	**94.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Trip Spike Control	----	----	----	----
				Client sampling date / time	22-Oct-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1832159-035	--------	--------	--------	--------
					Result	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		**43**	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		**57**	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		**29**	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		**0.2**	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		**12.9**	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		**1.8**	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		**9.4**	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		**3.9**	----	----	----	----
^ **Sum of BTEX**	----	0.2	mg/kg		**28.2**	----	----	----	----
^ **Total Xylenes**	----	0.5	mg/kg		**13.3**	----	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**105**	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		**95.1**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		**92.2**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	SRT-RB107	SRT-RB110	----	----	----
			Client sampling date / time	27-Oct-2018 00:00	28-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES1832159-031	ES1832159-032	--------	--------	--------
				Result	Result	----	----	----
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
^ **Total Polychlorinated biphenyls**	----	1	µg/L	<1	<1	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	----	----	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	----	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	----	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	----	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	----	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	----	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	----	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	----	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	----	----	----
^ **Total Chlordane (sum)**	----	0.5	µg/L	<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-RB107	SRT-RB110	----	----	----
				Client sampling date / time	27-Oct-2018 00:00	28-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1832159-031	ES1832159-032	--------	--------	--------
					Result	Result	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L		<0.5	<0.5	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L		<0.5	<0.5	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L		<0.5	<0.5	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L		<0.5	<0.5	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L		<2.0	<2.0	----	----	----
Dimethoate	60-51-5	0.5	µg/L		<0.5	<0.5	----	----	----
Diazinon	333-41-5	0.5	µg/L		<0.5	<0.5	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L		<0.5	<0.5	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L		<2.0	<2.0	----	----	----
Malathion	121-75-5	0.5	µg/L		<0.5	<0.5	----	----	----
Fenthion	55-38-9	0.5	µg/L		<0.5	<0.5	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L		<0.5	<0.5	----	----	----
Parathion	56-38-2	2.0	µg/L		<2.0	<2.0	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L		<0.5	<0.5	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L		<0.5	<0.5	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L		<0.5	<0.5	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L		<0.5	<0.5	----	----	----
Prothiofos	34643-46-4	0.5	µg/L		<0.5	<0.5	----	----	----
Ethion	563-12-2	0.5	µg/L		<0.5	<0.5	----	----	----
Carbophenothion	786-19-6	0.5	µg/L		<0.5	<0.5	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L		<0.5	<0.5	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-RB107	SRT-RB110	----	----	----
				Client sampling date / time	27-Oct-2018 00:00	28-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1832159-031	ES1832159-032	--------	--------	--------
					Result	Result	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	----	----	----
Toluene	108-88-3	2	µg/L		<2	<2	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	----	----	----
^ Total Xylenes	----	2	µg/L		<2	<2	----	----	----
^ Sum of BTEX	----	1	µg/L		<1	<1	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		**104**	**103**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-RB107	SRT-RB110	----	----	----
				Client sampling date / time	27-Oct-2018 00:00	28-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1832159-031	ES1832159-032	--------	--------	--------
					Result	Result	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		84.0	86.9	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		78.1	76.2	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		20.6	25.6	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		40.2	65.1	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		50.1	77.8	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		85.0	75.0	----	----	----
Anthracene-d10	1719-06-8	1.0	%		89.1	97.2	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		96.5	91.3	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		112	110	----	----	----
Toluene-D8	2037-26-5	2	%		106	101	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		100	98.5	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: SOIL

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	SRT-BH413A-0.5 - 28-Oct-2018 00:00	Mid brown sandy soil.
EA200: Description	SRT-BH418-0.2 - 27-Oct-2018 00:00	Mid grey sandy soil.
EA200: Description	SRT-BH418-1.0 - 27-Oct-2018 00:00	Mid grey sandy soil.
EA200: Description	SRT-BH424-0.5 - 27-Oct-2018 00:00	Mid brown sandy soil.
EA200: Description	SRT-BH425-0.5 - 27-Oct-2018 00:00	Mid brown sandy soil.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	29	129
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES1832159**	Page	: 1 of 31
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 29-Oct-2018
Order number	: .	Date Analysis Commenced	: 01-Nov-2018
C-O-C number	: ----	Issue Date	: 06-Nov-2018
Sampler	: ----		
Site	: 1791865 - SM TSE		
Quote number	: SY/698/17 C V4		
No. of samples received	: 35		
No. of samples analysed	: 23		

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

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

This Quality Control Report contains the following information:

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

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*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini		Sydney Organics, Smithfield, NSW
Gerrad Morgan	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Satishkumar Trivedi	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA029-A: pH Measurements (QC Lot: 2019473)									
ES1832159-008	SRT-BH413A-3.0	EA029: pH KCl (23A)	----	0.1	pH Unit	6.6	6.0	9.52	0% - 20%
		EA029: pH OX (23B)	----	0.1	pH Unit	4.8	4.8	0.00	0% - 20%
EA029-B: Acidity Trail (QC Lot: 2019473)									
ES1832159-008	SRT-BH413A-3.0	EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	<2	0.00	No Limit
		EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	5	5	0.00	No Limit
		EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	5	5	0.00	No Limit
EA029-C: Sulfur Trail (QC Lot: 2019473)									
ES1832159-008	SRT-BH413A-3.0	EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-D: Calcium Values (QC Lot: 2019473)									
ES1832159-008	SRT-BH413A-3.0	EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	<0.020	<0.020	0.00	No Limit
		EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-E: Magnesium Values (QC Lot: 2019473)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA029-E: Magnesium Values (QC Lot: 2019473) - continued									
ES1832159-008	SRT-BH413A-3.0	EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-H: Acid Base Accounting (QC Lot: 2019473)									
ES1832159-008	SRT-BH413A-3.0	EA029: ANC Fineness Factor	----	0.5	-	1.5	1.5	0.00	No Limit
		EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA029: Liming Rate	----	1	kg CaCO3/t	<1	<1	0.00	No Limit
		EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	<1	0.00	No Limit
		EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	<10	0.00	No Limit
		EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2014985)									
ES1832075-050	Anonymous	EA055: Moisture Content	----	0.1	%	6.0	5.9	2.09	0% - 20%
ES1832159-009	SRT-BH418-0.2	EA055: Moisture Content	----	0.1	%	9.4	9.7	3.09	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2014986)									
ES1832159-028	SRT-QCA108	EA055: Moisture Content	----	0.1	%	11.0	9.3	17.1	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 2018930)									
ES1832159-003	SRT-BH413A-0.5	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	8	8	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	10	7	35.6	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	10	<5	67.5	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	72	91	23.2	0% - 50%
		EG005T: Lead	7439-92-1	5	mg/kg	580	497	15.5	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	314	301	4.42	0% - 20%
ES1832159-022	SRT-BH425-1.0	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	2	2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	33	18	58.7	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	123	109	12.0	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	79	56	35.1	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2018929)									
ES1832159-003	SRT-BH413A-0.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	1.3	1.5	18.6	0% - 50%
ES1832159-022	SRT-BH425-1.0	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.2	0.1	0.00	No Limit
EP035G: Total Phenol by Discrete Analyser (QC Lot: 2019150)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP035G: Total Phenol by Discrete Analyser (QC Lot: 2019150) - continued									
ES1831696-017	Anonymous	EP035G: Phenols (Total)	----	1	mg/kg	<1	<1	0.00	No Limit
ES1832758-004	Anonymous	EP035G: Phenols (Total)	----	1	mg/kg	<1	<1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2012388)									
ES1832159-003	SRT-BH413A-0.5	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2012387)									
ES1832159-003	SRT-BH413A-0.5	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2012387)									
ES1832159-003	SRT-BH413A-0.5	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2012387) - continued									
ES1832159-003	SRT-BH413A-0.5	EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2013305)									
ES1832261-006	Anonymous	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1832159-003	SRT-BH413A-0.5	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074B: Oxygenated Compounds (QC Lot: 2013305)									
ES1832261-006	Anonymous	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.00	No Limit
ES1832159-003	SRT-BH413A-0.5	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.00	No Limit
EP074C: Sulfonated Compounds (QC Lot: 2013305)									
ES1832261-006	Anonymous	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1832159-003	SRT-BH413A-0.5	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074D: Fumigants (QC Lot: 2013305)									
ES1832261-006	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074D: Fumigants (QC Lot: 2013305) - continued									
ES1832261-006	Anonymous	EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1832159-003	SRT-BH413A-0.5	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2013305)									
ES1832261-006	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.00	No Limit
ES1832159-003	SRT-BH413A-0.5	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2013305) - continued									
ES1832159-003	SRT-BH413A-0.5	EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 2013305)									
ES1832261-006	Anonymous	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1832159-003	SRT-BH413A-0.5	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074F: Halogenated Aromatic Compounds (QC Lot: 2013305) - continued									
ES1832159-003	SRT-BH413A-0.5	EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 2013305)									
ES1832261-006	Anonymous	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1832159-003	SRT-BH413A-0.5	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074H: Naphthalene (QC Lot: 2013305)									
ES1832261-006	Anonymous	EP074: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES1832159-003	SRT-BH413A-0.5	EP074: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2012385)									
ES1832159-020	SRT-BH425-0.4	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	111	104	6.58	0% - 20%
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	142	164	14.2	0% - 20%
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	32.4	36.1	10.6	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	154	165	6.97	0% - 20%
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	777	946	19.7	0% - 20%
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	228	# 283	21.6	0% - 20%
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	860	# 1120	26.0	0% - 20%
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	764	# 999	26.7	0% - 20%
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	374	# 500	28.9	0% - 20%
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	323	# 439	30.5	0% - 20%
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	378	# 503	28.4	0% - 20%
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	150	# 208	32.4	0% - 20%
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	320	# 414	25.4	0% - 20%
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	128	# 160	21.7	0% - 20%
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	44.8	54.6	19.8	0% - 50%
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	134	159	17.4	0% - 20%
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	4920	# 6250	23.9	0% - 20%
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	472	# 612	25.7	0% - 20%
ES1832159-003	SRT-BH413A-0.5	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2012385) - continued									
ES1832159-003	SRT-BH413A-0.5	EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	0.9	0.8	14.3	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	1.0	0.9	13.9	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	0.6	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	0.6	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	0.7	0.6	18.6	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	0.6	0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	4.4	2.8	44.4	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	0.7	0.6	27.2	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2014218)									
ES1832019-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2012386)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2012386) - continued									
ES1832159-020	SRT-BH425-0.4	EP071: C15 - C28 Fraction	----	100	mg/kg	17300	15500	10.8	0% - 20%
		EP071: C29 - C36 Fraction	----	100	mg/kg	8810	7430	17.1	0% - 20%
		EP071: C10 - C14 Fraction	----	50	mg/kg	960	850	11.9	No Limit
ES1832159-003	SRT-BH413A-0.5	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2013304)									
ES1832261-006	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1832159-003	SRT-BH413A-0.5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2013313)									
ES1832019-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1832159-016	SRT-BH424-1.0	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2014219)									
ES1832019-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	1220	1000	19.8	0% - 50%
		EP071: C29 - C36 Fraction	----	100	mg/kg	190	170	11.8	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2012386)									
ES1832159-020	SRT-BH425-0.4	EP071: >C16 - C34 Fraction	----	100	mg/kg	23600	20800	12.5	0% - 20%
		EP071: >C34 - C40 Fraction	----	100	mg/kg	4620	4150	10.7	0% - 20%
		EP071: >C10 - C16 Fraction	----	50	mg/kg	2140	2380	10.5	0% - 20%
ES1832159-003	SRT-BH413A-0.5	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2013304)									
ES1832261-006	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1832159-003	SRT-BH413A-0.5	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2013313)									
ES1832019-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1832159-016	SRT-BH424-1.0	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2014219)									
ES1832019-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	1350	1120	18.9	0% - 50%
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080: BTEXN (QC Lot: 2013304)									
ES1832261-006	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080: BTEXN (QC Lot: 2013304) - continued									
ES1832261-006	Anonymous	EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES1832159-003	SRT-BH413A-0.5	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP080: BTEXN (QC Lot: 2013313)									
ES1832019-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES1832159-016	SRT-BH424-1.0	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2013606)									
EM1817408-010	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	0.0085	0.0083	1.74	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	0.0029	0.0028	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0184	0.0196	6.55	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	0.0034	0.0038	12.2	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.289	0.308	6.25	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	0.0038	0.0040	5.61	No Limit
ES1832293-010	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0003	0.0002	38.9	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2013606)									
EM1817408-010	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0194	0.0161	18.9	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0333	# 0.0261	24.1	0% - 20%

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2013606) - continued									
EM1817408-010	Anonymous	EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0053	0.0045	17.9	0% - 50%
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0206	0.0194	6.22	0% - 20%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	0.0133	0.0132	0.00	0% - 20%
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	0.0189	0.0194	2.67	0% - 20%
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0028	0.0028	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0091	0.0097	7.00	0% - 50%
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	0.0020	0.0023	10.2	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0012	<0.0012	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	0.006	0.005	0.00	No Limit
ES1832293-010	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2013606)									
EM1817408-010	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	0.0058	0.0064	9.52	0% - 50%
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0012	<0.0012	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0012	<0.0012	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0012	<0.0012	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0012	<0.0012	0.00	No Limit
ES1832293-010	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2013606) - continued									
ES1832293-010	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2013606)									
EM1817408-010	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	0.0541	0.0575	6.03	0% - 20%
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	0.240	0.247	2.77	0% - 20%
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	0.0684	0.0714	4.18	0% - 20%
ES1832293-010	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 2015499)									
ES1832159-031	SRT-RB107	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
ES1832237-006	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.056	0.058	2.06	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.006	<0.005	0.00	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2014369)									
ES1832143-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
ES1832280-002	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2012277)									
ES1832164-002	Anonymous	EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	<1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2012275)									
ES1832164-002	Anonymous	EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	<2.0	0.00	No Limit
		EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	<2.0	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2012275)									
ES1832164-002	Anonymous	EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2012275) - continued									
ES1832164-002	Anonymous	EP068: Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	<2.0	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	<2.0	0.00	No Limit
		EP068: Parathion	56-38-2	2	µg/L	<2.0	<2.0	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2012276)									
ES1832164-002	Anonymous	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2012274)									
ES1832164-002	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.00	No Limit
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2015015)									
ES1832020-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
ES1832369-004	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2012274)									
ES1832164-002	Anonymous	EP071: >C10 - C16 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2015015)									
ES1832020-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
ES1832369-004	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 2015015)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080: BTEXN (QC Lot: 2015015) - continued									
ES1832020-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
ES1832369-004	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit

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

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA029-A: pH Measurements (QCLot: 2019473)								
EA029: pH KCl (23A)	----	0.1	pH Unit	<0.1	4.6 pH Unit	95.6	70	130
EA029: pH OX (23B)	----	0.1	pH Unit	<0.1	4.3 pH Unit	103	70	130
EA029-B: Acidity Trail (QCLot: 2019473)								
EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	17.7 mole H+ / t	97.8	70	130
EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	35.2 mole H+ / t	101	70	130
EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	----	----	----	----
EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029-C: Sulfur Trail (QCLot: 2019473)								
EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	0.052 % S	97.3	70	130
EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	0.158 % S	93.9	70	130
EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	----	----	----	----
EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	----	----	----	----
EA029-D: Calcium Values (QCLot: 2019473)								
EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	<0.020	0.097 % Ca	110	70	130
EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	<0.020	0.22 % Ca	104	70	130
EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	----	----	----	----
EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	----	----	----	----
EA029-E: Magnesium Values (QCLot: 2019473)								
EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	0.25 % Mg	95.6	70	130
EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	0.234 % Mg	92.8	70	130
EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	----	----	----	----
EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	----	----	----	----
EA029-H: Acid Base Accounting (QCLot: 2019473)								
EA029: ANC Fineness Factor	----	0.5	-	<0.5	----	----	----	----
EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate	----	1	kg CaCO3/t	<1	----	----	----	----
EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	----	----	----	----

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 2018930)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	94.3	86	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	95.3	83	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	96.3	76	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	94.3	86	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	91.7	80	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	101	87	123
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	102	80	122
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2018929)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	86.3	70	105
EP035G: Total Phenol by Discrete Analyser (QCLot: 2019150)								
EP035G: Phenols (Total)	----	1	mg/kg	<1	5 mg/kg	80.0	60	102
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2012388)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	81.0	62	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 2012387)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	98.7	69	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	97.4	65	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	94.1	67	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	95.3	68	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.5	65	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	86.7	67	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	90.4	69	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	91.5	62	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	88.5	63	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	93.0	66	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	89.9	64	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	91.5	66	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	93.4	67	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	83.7	67	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	93.6	69	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.4	69	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	78.9	56	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	88.2	62	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	83.1	66	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	94.3	64	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	78.0	54	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2012387)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	76.0	59	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	86.9	62	128

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2012387) - continued								
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	100	54	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	84.3	67	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	85.6	70	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	80.5	72	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	86.1	68	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	91.4	68	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	86.5	69	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	88.6	76	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	77.6	64	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	86.5	70	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	79.9	69	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	89.0	66	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	80.1	68	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	92.3	62	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	87.3	68	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	89.3	65	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	68.6	41	123
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2013305)								
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	86.8	67	113
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	89.2	65	117
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	91.7	66	122
EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	90.9	68	118
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	91.3	69	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	90.9	69	117
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	90.5	69	115
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	92.0	66	118
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	97.8	59	125
EP074B: Oxygenated Compounds (QCLot: 2013305)								
EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	10 mg/kg	85.1	30	156
EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	10 mg/kg	66.1	58	136
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	10 mg/kg	86.1	62	132
EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	10 mg/kg	79.7	54	136
EP074C: Sulfonated Compounds (QCLot: 2013305)								
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	84.6	54	126
EP074D: Fumigants (QCLot: 2013305)								
EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	85.8	60	126
EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	90.2	68	124
EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	85.4	51	119

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074D: Fumigants (QCLot: 2013305) - continued								
EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	86.3	52	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	90.9	63	115
EP074E: Halogenated Aliphatic Compounds (QCLot: 2013305)								
EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	10 mg/kg	82.2	30	148
EP074: Chloromethane	74-87-3	5	mg/kg	<5	10 mg/kg	89.2	41	141
EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	10 mg/kg	83.3	43	147
EP074: Bromomethane	74-83-9	5	mg/kg	<5	10 mg/kg	87.6	47	141
EP074: Chloroethane	75-00-3	5	mg/kg	<5	10 mg/kg	89.7	49	143
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	10 mg/kg	84.6	49	135
EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	86.5	54	126
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	77.0	43	129
EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	85.8	64	120
EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	87.3	67	125
EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	87.8	69	121
EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	87.4	65	117
EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	86.3	65	123
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	81.7	59	125
EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	89.3	65	125
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	91.7	70	118
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	87.7	68	118
EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	91.2	64	126
EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	93.4	68	122
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	83.0	67	143
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	87.8	62	122
EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	93.7	54	128
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	90.2	55	129
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	91.5	65	121
EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	90.6	61	125
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	101	20	134
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	91.9	53	129
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	87.8	50	128
EP074F: Halogenated Aromatic Compounds (QCLot: 2013305)								
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	90.4	68	116
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	94.6	70	114
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	94.0	68	122
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	91.7	67	123
EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	93.3	70	116
EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	95.0	67	117
EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	94.2	70	114

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074F: Halogenated Aromatic Compounds (QCLot: 2013305) - continued								
EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	92.3	48	122
EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	93.5	52	122
EP074G: Trihalomethanes (QCLot: 2013305)								
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	87.7	66	124
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	85.5	61	121
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	85.9	63	121
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	84.1	60	126
EP074H: Naphthalene (QCLot: 2013305)								
EP074: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	98.9	67	129
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2012385)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	117	77	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	121	72	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	118	73	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	121	72	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	125	75	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	113	77	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	122	73	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	121	74	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	110	69	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	119	75	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	110	68	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	111	74	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	111	70	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	105	61	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	110	62	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	100	63	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2014218)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	97.2	77	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	94.3	72	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	93.2	73	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	96.3	72	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	99.0	75	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	94.8	77	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	95.2	73	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	95.0	74	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	92.4	69	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	95.4	75	127

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2014218) - continued								
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	89.2	68	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	93.2	74	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	94.4	70	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	83.0	61	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	87.2	62	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	91.8	63	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2012386)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	93.8	75	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	95.0	77	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	90.7	71	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2013304)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	79.7	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2013313)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	80.3	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2014219)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	94.8	75	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	95.0	77	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	91.5	71	129
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2012386)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	96.5	77	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	99.4	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	82.4	63	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2013304)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	82.2	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2013313)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	80.4	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2014219)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	99.1	77	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	91.8	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	77.9	63	131
EP080: BTEXN (QCLot: 2013304)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	89.8	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	85.2	67	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	85.5	65	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	84.8	66	118

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP080: BTEXN (QCLot: 2013304) - continued								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	87.6	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	88.5	63	119
EP080: BTEXN (QCLot: 2013313)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	84.6	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	77.6	67	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	77.0	65	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	77.2	66	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	80.5	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	87.9	63	119
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2013606)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00125 mg/kg	60.0	57	121
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	69.6	55	125
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.4	52	126
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	63.2	54	123
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	72.4	55	127
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	65.2	54	125
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2013606)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	58.6	52	128
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	58.8	54	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	61.2	58	127
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	67.6	57	128
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.6	60	134
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	79.2	63	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	59.6	55	130
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	112	62	130
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	62.8	53	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	61.2	49	129
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	64.1	59	129
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2013606)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	59.2	52	132
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	72.8	65	126
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	67.1	64	126
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	72.9	63	124
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	64.7	58	125

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2013606) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	67.2	61	130
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.4	55	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2013606)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	63.2	54	130
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00125 mg/kg	71.6	61	130
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	62.0	62	130
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00125 mg/kg	61.2	60	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 2015499)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	97.5	82	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.6	84	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	90.9	86	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	95.1	83	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	91.5	85	115
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	90.8	84	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	98.8	79	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2014369)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	89.3	77	111
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2012277)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	82.0	62	107
EP068A: Organochlorine Pesticides (OC) (QCLot: 2012275)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	86.7	65	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	83.5	58	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	92.9	69	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	89.8	70	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	92.0	69	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	84.9	65	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	82.2	66	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	105	67	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	95.9	64	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	102	67	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	90.7	63	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	87.1	65	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	85.0	66	112

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 2012275) - continued								
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	96.9	65	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	89.7	67	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	103	72	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	78.4	67	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	92.7	65	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	104	65	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	78.1	64	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	103	61	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2012275)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	94.1	66	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	95.8	64	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	26.4	20	48
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	101	70	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	87.3	71	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	85.3	77	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	88.9	70	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	106	68	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	83.5	69	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	102	75	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	85.2	67	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	83.4	69	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	98.0	72	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	98.8	68	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	106	64	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	102	68	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	101	74	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	104	66	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	101	52	128
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2012276)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	68.5	50	94
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	83.2	64	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	85.3	62	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	84.0	64	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	80.1	63	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	96.7	64	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	96.5	64	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	98.6	63	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	99.4	64	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	86.7	63	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2012276) - continued								
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	88.9	62	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	86.2	63	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	87.4	63	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	87.3	60	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	90.3	61	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	91.8	59	118
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2012274)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	90.8	76	116
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	102	83	109
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	102	75	113
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2015015)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	82.3	75	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2012274)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	2500 µg/L	89.8	76	114
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	3500 µg/L	105	81	111
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1500 µg/L	81.1	77	119
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2015015)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	82.7	75	127
EP080: BTEXN (QCLot: 2015015)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	91.6	70	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	79.2	69	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	84.4	70	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	84.9	69	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	84.2	72	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	97.1	70	120

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005T: Total Metals by ICP-AES (QCLot: 2018930)							
ES1832159-003	SRT-BH413A-0.5	EG005T: Arsenic	7440-38-2	50 mg/kg	83.1	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	97.0	70	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 2018930) - continued							
ES1832159-003	SRT-BH413A-0.5	EG005T: Chromium	7440-47-3	50 mg/kg	100	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	109	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	98.4	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	93.2	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	104	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2018929)							
ES1832159-003	SRT-BH413A-0.5	EG035T: Mercury	7439-97-6	5 mg/kg	99.6	70	130
EP035G: Total Phenol by Discrete Analyser (QCLot: 2019150)							
ES1831696-017	Anonymous	EP035G: Phenols (Total)	----	4.2 mg/kg	70.2	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2012388)							
ES1832159-003	SRT-BH413A-0.5	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	99.0	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2012387)							
ES1832159-003	SRT-BH413A-0.5	EP068: gamma-BHC	58-89-9	0.5 mg/kg	106	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	79.8	70	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	79.9	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	77.0	70	130
		EP068: Endrin	72-20-8	2 mg/kg	104	70	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	92.0	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2012387)							
ES1832159-003	SRT-BH413A-0.5	EP068: Diazinon	333-41-5	0.5 mg/kg	75.6	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	97.1	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	81.7	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	87.4	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	72.7	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 2013305)							
ES1832159-003	SRT-BH413A-0.5	EP074: 1.1-Dichloroethene	75-35-4	2.5 mg/kg	73.0	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	75.6	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 2013305)							
ES1832159-003	SRT-BH413A-0.5	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	83.7	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2012385)							
ES1832159-003	SRT-BH413A-0.5	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	107	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	122	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2014218)							
ES1832019-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	88.8	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	101	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2012386)							

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2012386) - continued							
ES1832159-003	SRT-BH413A-0.5	EP071: C10 - C14 Fraction	----	523 mg/kg	83.1	73	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	103	53	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	122	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2013304)							
ES1832159-003	SRT-BH413A-0.5	EP080: C6 - C9 Fraction	----	32.5 mg/kg	81.1	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2013313)							
ES1832019-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	85.5	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2014219)							
ES1832019-001	Anonymous	EP071: C10 - C14 Fraction	----	523 mg/kg	107	73	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	115	53	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	125	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2012386)							
ES1832159-003	SRT-BH413A-0.5	EP071: >C10 - C16 Fraction	----	860 mg/kg	103	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	116	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	117	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2013304)							
ES1832159-003	SRT-BH413A-0.5	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	83.0	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2013313)							
ES1832019-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	89.4	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2014219)							
ES1832019-001	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	107	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	119	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	116	52	132
EP080: BTEXN (QCLot: 2013304)							
ES1832159-003	SRT-BH413A-0.5	EP080: Benzene	71-43-2	2.5 mg/kg	83.0	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	82.2	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	82.3	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	79.3	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	81.9	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	80.2	70	130
EP080: BTEXN (QCLot: 2013313)							
ES1832019-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	72.7	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	74.0	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	84.4	70	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 2013313) - continued							
ES1832019-001	Anonymous	EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	81.9	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	84.2	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	79.8	70	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2013606)							
EM1817408-010	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00125 mg/kg	# Not Determined	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00125 mg/kg	85.2	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00125 mg/kg	# Not Determined	50	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00125 mg/kg	# 263	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00125 mg/kg	# Not Determined	50	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.00125 mg/kg	106	50	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2013606)							
EM1817408-010	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	# 335	30	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	# Not Determined	50	130
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	# Not Determined	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	90.4	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	# Not Determined	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	# Not Determined	50	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	# Not Determined	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	108	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	# Not Determined	50	130
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	# 205	30	130
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	93.9	30	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2013606)							
EM1817408-010	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	59.6	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	60.6	30	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	93.8	30	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	81.9	30	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2013606) - continued							
EM1817408-010	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	90.7	30	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	58.0	30	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	104	30	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2013606)							
EM1817408-010	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00125 mg/kg	95.2	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00125 mg/kg	# Not Determined	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.00125 mg/kg	# Not Determined	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00125 mg/kg	# Not Determined	50	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 2015499)							
ES1832159-032	SRT-RB110	EG020A-T: Arsenic	7440-38-2	1 mg/L	91.7	70	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	94.5	70	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	96.1	70	130
		EG020A-T: Copper	7440-50-8	1 mg/L	93.9	70	130
		EG020A-T: Lead	7439-92-1	1 mg/L	96.8	70	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	94.4	70	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	96.2	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2014369)							
ES1832159-031	SRT-RB107	EG035T: Mercury	7439-97-6	0.01 mg/L	98.6	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2012277)							
ES1832164-002	Anonymous	EP066: Total Polychlorinated biphenyls	----	10 µg/L	81.0	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2012275)							
ES1832164-002	Anonymous	EP068: gamma-BHC	58-89-9	5 µg/L	82.0	70	130
		EP068: Heptachlor	76-44-8	5 µg/L	73.6	70	130
		EP068: Aldrin	309-00-2	5 µg/L	73.8	70	130
		EP068: Dieldrin	60-57-1	5 µg/L	73.5	70	130
		EP068: Endrin	72-20-8	20 µg/L	93.8	70	130
		EP068: 4.4`-DDT	50-29-3	20 µg/L	94.9	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2012275)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2012275) - continued							
ES1832164-002	Anonymous	EP068: Diazinon	333-41-5	5 µg/L	94.1	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	5 µg/L	91.0	70	130
		EP068: Pirimphos-ethyl	23505-41-1	5 µg/L	73.4	70	130
		EP068: Bromophos-ethyl	4824-78-6	5 µg/L	80.2	70	130
		EP068: Prothiofos	34643-46-4	5 µg/L	71.8	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2012276)							
ES1832164-002	Anonymous	EP075(SIM): Acenaphthene	83-32-9	20 µg/L	88.7	70	130
		EP075(SIM): Pyrene	129-00-0	20 µg/L	88.8	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2012274)							
ES1832164-002	Anonymous	EP071: C10 - C14 Fraction	----	200 µg/L	128	74	150
		EP071: C15 - C28 Fraction	----	300 µg/L	91.2	77	153
		EP071: C29 - C36 Fraction	----	200 µg/L	93.1	67	153
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2015015)							
ES1832020-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	95.4	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2012274)							
ES1832164-002	Anonymous	EP071: >C10 - C16 Fraction	----	250 µg/L	77.5	74	150
		EP071: >C16 - C34 Fraction	----	350 µg/L	77.6	77	153
		EP071: >C34 - C40 Fraction	----	150 µg/L	110	67	153
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2015015)							
ES1832020-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	99.7	70	130
EP080: BTEXN (QCLot: 2015015)							
ES1832020-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	85.9	70	130
		EP080: Toluene	108-88-3	25 µg/L	92.3	70	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	89.3	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	89.2	70	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	92.9	70	130
		EP080: Naphthalene	91-20-3	25 µg/L	95.2	70	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES1832159**	Page	: 1 of 17
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 29-Oct-2018
Site	: 1791865 - SM TSE	Issue Date	: 06-Nov-2018
Sampler	: ----	No. of samples received	: 35
Order number	: .	No. of samples analysed	: 23

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

- **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							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	ES1832159--020	SRT-BH425-0.4	**Anthracene**	120-12-7	21.6 %	0% - 20%	**RPD exceeds LOR based limits**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	ES1832159--020	SRT-BH425-0.4	**Fluoranthene**	206-44-0	26.0 %	0% - 20%	**RPD exceeds LOR based limits**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	ES1832159--020	SRT-BH425-0.4	**Pyrene**	129-00-0	26.7 %	0% - 20%	**RPD exceeds LOR based limits**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	ES1832159--020	SRT-BH425-0.4	**Benz(a)anthracene**	56-55-3	28.9 %	0% - 20%	**RPD exceeds LOR based limits**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	ES1832159--020	SRT-BH425-0.4	**Chrysene**	218-01-9	30.5 %	0% - 20%	**RPD exceeds LOR based limits**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	ES1832159--020	SRT-BH425-0.4	**Benzo(b+j)fluoranthene**	205-99-2 205-82-3	28.4 %	0% - 20%	**RPD exceeds LOR based limits**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	ES1832159--020	SRT-BH425-0.4	**Benzo(k)fluoranthene**	207-08-9	32.4 %	0% - 20%	**RPD exceeds LOR based limits**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	ES1832159--020	SRT-BH425-0.4	**Benzo(a)pyrene**	50-32-8	25.4 %	0% - 20%	**RPD exceeds LOR based limits**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	ES1832159--020	SRT-BH425-0.4	**Indeno(1.2.3.cd)pyrene**	193-39-5	21.7 %	0% - 20%	**RPD exceeds LOR based limits**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	ES1832159--020	SRT-BH425-0.4	**Sum of polycyclic aromatic hydrocarbons**	----	23.9 %	0% - 20%	**RPD exceeds LOR based limits**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	ES1832159--020	SRT-BH425-0.4	**Benzo(a)pyrene TEQ (zero)**	----	25.7 %	0% - 20%	**RPD exceeds LOR based limits**
EP231B: Perfluoroalkyl Carboxylic Acids	EM1817408--010	Anonymous	**Perfluorohexanoic acid (PFHxA)**	307-24-4	24.1 %	0% - 20%	**RPD exceeds LOR based limits**
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EM1817408--010	Anonymous	**Perfluorobutane sulfonic acid (PFBS)**	375-73-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EM1817408--010	Anonymous	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EM1817408--010	Anonymous	**Perfluoroheptane sulfonic acid (PFHpS)**	375-92-8	263 %	50-130%	**Recovery greater than upper data quality objective**
EP231A: Perfluoroalkyl Sulfonic Acids	EM1817408--010	Anonymous	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	EM1817408--010	Anonymous	**Perfluorobutanoic acid (PFBA)**	375-22-4	335 %	30-130%	**Recovery greater than upper data quality objective**
EP231B: Perfluoroalkyl Carboxylic Acids	EM1817408--010	Anonymous	**Perfluoropentanoic acid (PFPeA)**	2706-90-3	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	EM1817408--010	Anonymous	**Perfluorohexanoic acid (PFHxA)**	307-24-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries - Continued							
EP231B: Perfluoroalkyl Carboxylic Acids	EM1817408--010	Anonymous	**Perfluorooctanoic acid (PFOA)**	335-67-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	EM1817408--010	Anonymous	**Perfluorononanoic acid (PFNA)**	375-95-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	EM1817408--010	Anonymous	**Perfluorodecanoic acid (PFDA)**	335-76-2	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	EM1817408--010	Anonymous	**Perfluorododecanoic acid (PFDoDA)**	307-55-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231B: Perfluoroalkyl Carboxylic Acids	EM1817408--010	Anonymous	**Perfluorotridecanoic acid (PFTrDA)**	72629-94-8	205 %	30-130%	**Recovery greater than upper data quality objective**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	EM1817408--010	Anonymous	**6:2 Fluorotelomer sulfonic acid (6:2 FTS)**	27619-97-2	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	EM1817408--010	Anonymous	**8:2 Fluorotelomer sulfonic acid (8:2 FTS)**	39108-34-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	EM1817408--010	Anonymous	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	120226-60-0	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Regular Sample Surrogates

Sub-Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP075(SIM)S: Phenolic Compound Surrogates	ES1832159-009	SRT-BH418-0.2	**2-Chlorophenol-D4**	93951-73-6	65.1 %	66-122 %	**Recovery less than lower data quality objective**
EP075(SIM)S: Phenolic Compound Surrogates	ES1832159-009	SRT-BH418-0.2	**2.4.6-Tribromophenol**	118-79-6	24.0 %	40-138 %	**Recovery less than lower data quality objective**
EP075(SIM)S: Phenolic Compound Surrogates	ES1832159-019	SRT-BH424-3.0	**2.4.6-Tribromophenol**	118-79-6	37.2 %	40-138 %	**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 / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA029-A: pH Measurements							
Snap Lock Bag - frozen (EA029) SRT-BH418-3.0, SRT-BH425-3.0	**27-Oct-2018**	**06-Nov-2018**	22-Jul-2021	✓	**06-Nov-2018**	04-Feb-2019	✓
Snap Lock Bag - frozen (EA029) SRT-BH413A-3.0	**28-Oct-2018**	**06-Nov-2018**	23-Jul-2021	✓	**06-Nov-2018**	04-Feb-2019	✓
EA029-B: Acidity Trail							
Snap Lock Bag - frozen (EA029) SRT-BH418-3.0, SRT-BH425-3.0	**27-Oct-2018**	**06-Nov-2018**	22-Jul-2021	✓	**06-Nov-2018**	04-Feb-2019	✓
Snap Lock Bag - frozen (EA029) SRT-BH413A-3.0	**28-Oct-2018**	**06-Nov-2018**	23-Jul-2021	✓	**06-Nov-2018**	04-Feb-2019	✓
EA029-C: Sulfur Trail							
Snap Lock Bag - frozen (EA029) SRT-BH418-3.0, SRT-BH425-3.0	**27-Oct-2018**	**06-Nov-2018**	22-Jul-2021	✓	**06-Nov-2018**	04-Feb-2019	✓
Snap Lock Bag - frozen (EA029) SRT-BH413A-3.0	**28-Oct-2018**	**06-Nov-2018**	23-Jul-2021	✓	**06-Nov-2018**	04-Feb-2019	✓
EA029-D: Calcium Values							
Snap Lock Bag - frozen (EA029) SRT-BH418-3.0, SRT-BH425-3.0	**27-Oct-2018**	**06-Nov-2018**	22-Jul-2021	✓	**06-Nov-2018**	04-Feb-2019	✓
Snap Lock Bag - frozen (EA029) SRT-BH413A-3.0	**28-Oct-2018**	**06-Nov-2018**	23-Jul-2021	✓	**06-Nov-2018**	04-Feb-2019	✓
EA029-E: Magnesium Values							
Snap Lock Bag - frozen (EA029) SRT-BH418-3.0, SRT-BH425-3.0	**27-Oct-2018**	**06-Nov-2018**	22-Jul-2021	✓	**06-Nov-2018**	04-Feb-2019	✓
Snap Lock Bag - frozen (EA029) SRT-BH413A-3.0	**28-Oct-2018**	**06-Nov-2018**	23-Jul-2021	✓	**06-Nov-2018**	04-Feb-2019	✓
EA029-F: Excess Acid Neutralising Capacity							
Snap Lock Bag - frozen (EA029) SRT-BH418-3.0, SRT-BH425-3.0	**27-Oct-2018**	**06-Nov-2018**	22-Jul-2021	✓	**06-Nov-2018**	04-Feb-2019	✓
Snap Lock Bag - frozen (EA029) SRT-BH413A-3.0	**28-Oct-2018**	**06-Nov-2018**	23-Jul-2021	✓	**06-Nov-2018**	04-Feb-2019	✓

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
EA029-G: Retained Acidity								
Snap Lock Bag - frozen (EA029)								
SRT-BH418-3.0,	SRT-BH425-3.0	**27-Oct-2018**	**06-Nov-2018**	22-Jul-2021	✓	**06-Nov-2018**	04-Feb-2019	✓
Snap Lock Bag - frozen (EA029)								
SRT-BH413A-3.0		**28-Oct-2018**	**06-Nov-2018**	23-Jul-2021	✓	**06-Nov-2018**	04-Feb-2019	✓
EA029-H: Acid Base Accounting								
Snap Lock Bag - frozen (EA029)								
SRT-BH418-3.0,	SRT-BH425-3.0	**27-Oct-2018**	**06-Nov-2018**	22-Jul-2021	✓	**06-Nov-2018**	04-Feb-2019	✓
Snap Lock Bag - frozen (EA029)								
SRT-BH413A-3.0		**28-Oct-2018**	**06-Nov-2018**	23-Jul-2021	✓	**06-Nov-2018**	04-Feb-2019	✓
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
SRT-BH418-0.2,	SRT-BH418-1.0,	**27-Oct-2018**	**----**	----	----	**01-Nov-2018**	10-Nov-2018	✓
SRT-BH424-0.5,	SRT-BH424-1.0,							
SRT-BH424-3.0,	SRT-BH425-0.4,							
SRT-BH425-1.0,	SRT-BH425-2.0,							
SRT-QCA108,	SRT-QCA109							
Soil Glass Jar - Unpreserved (EA055)								
SRT-BH413A-0.5,	SRT-BH413A-1.5,	**28-Oct-2018**	**----**	----	----	**01-Nov-2018**	11-Nov-2018	✓
SRT-BH413A-3.0								
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Snap Lock Bag: Separate bag received (EA200)								
SRT-BH418-0.2,	SRT-BH418-1.0,	**27-Oct-2018**	**----**	----	----	**02-Nov-2018**	25-Apr-2019	✓
SRT-BH424-0.5,	SRT-BH425-0.5							
Snap Lock Bag: Separate bag received (EA200)								
SRT-BH413A-0.5		**28-Oct-2018**	**----**	----	----	**02-Nov-2018**	26-Apr-2019	✓
EA200N: Asbestos Quantification (non-NATA)								
Snap Lock Bag: Separate bag received (EA200N)								
SRT-BH418-0.2,	SRT-BH418-1.0,	**27-Oct-2018**	**----**	----	----	**02-Nov-2018**	25-Apr-2019	✓
SRT-BH424-0.5,	SRT-BH425-0.5							
Snap Lock Bag: Separate bag received (EA200N)								
SRT-BH413A-0.5		**28-Oct-2018**	**----**	----	----	**02-Nov-2018**	26-Apr-2019	✓
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
SRT-BH418-0.2,	SRT-BH418-1.0,	**27-Oct-2018**	**05-Nov-2018**	25-Apr-2019	✓	**05-Nov-2018**	25-Apr-2019	✓
SRT-BH424-0.5,	SRT-BH424-1.0,							
SRT-BH424-3.0,	SRT-BH425-0.4,							
SRT-BH425-1.0,	SRT-BH425-2.0,							
SRT-QCA108,	SRT-QCA109							
Soil Glass Jar - Unpreserved (EG005T)								
SRT-BH413A-0.5,	SRT-BH413A-1.5,	**28-Oct-2018**	**05-Nov-2018**	26-Apr-2019	✓	**05-Nov-2018**	26-Apr-2019	✓
SRT-BH413A-3.0								

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
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T)								
SRT-BH418-0.2,	SRT-BH418-1.0,	**27-Oct-2018**	**05-Nov-2018**	24-Nov-2018	✓	**06-Nov-2018**	24-Nov-2018	✓
SRT-BH424-0.5,	SRT-BH424-1.0,							
SRT-BH424-3.0,	SRT-BH425-0.4,							
SRT-BH425-1.0,	SRT-BH425-2.0,							
SRT-QCA108,	SRT-QCA109							
Soil Glass Jar - Unpreserved (EG035T)								
SRT-BH413A-0.5,	SRT-BH413A-1.5,	**28-Oct-2018**	**05-Nov-2018**	25-Nov-2018	✓	**06-Nov-2018**	25-Nov-2018	✓
SRT-BH413A-3.0								
EP035G: Total Phenol by Discrete Analyser								
Soil Glass Jar - Unpreserved (EP035G)								
SRT-BH418-0.2,	SRT-BH424-0.5,	**27-Oct-2018**	**05-Nov-2018**	10-Nov-2018	✓	**05-Nov-2018**	10-Nov-2018	✓
SRT-BH425-0.4								
Soil Glass Jar - Unpreserved (EP035G)								
SRT-BH413A-0.5,	SRT-BH413A-1.5	**28-Oct-2018**	**05-Nov-2018**	11-Nov-2018	✓	**05-Nov-2018**	11-Nov-2018	✓
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066)								
SRT-BH418-0.2,	SRT-BH424-0.5,	**27-Oct-2018**	**02-Nov-2018**	10-Nov-2018	✓	**05-Nov-2018**	12-Dec-2018	✓
SRT-BH425-0.4								
Soil Glass Jar - Unpreserved (EP066)								
SRT-BH413A-0.5,	SRT-BH413A-1.5	**28-Oct-2018**	**02-Nov-2018**	11-Nov-2018	✓	**05-Nov-2018**	12-Dec-2018	✓
EP068A: Organochlorine Pesticides (OC)								
Soil Glass Jar - Unpreserved (EP068)								
SRT-BH418-0.2,	SRT-BH424-0.5,	**27-Oct-2018**	**02-Nov-2018**	10-Nov-2018	✓	**05-Nov-2018**	12-Dec-2018	✓
SRT-BH425-0.4								
Soil Glass Jar - Unpreserved (EP068)								
SRT-BH413A-0.5,	SRT-BH413A-1.5	**28-Oct-2018**	**02-Nov-2018**	11-Nov-2018	✓	**05-Nov-2018**	12-Dec-2018	✓
EP068B: Organophosphorus Pesticides (OP)								
Soil Glass Jar - Unpreserved (EP068)								
SRT-BH418-0.2,	SRT-BH424-0.5,	**27-Oct-2018**	**02-Nov-2018**	10-Nov-2018	✓	**05-Nov-2018**	12-Dec-2018	✓
SRT-BH425-0.4								
Soil Glass Jar - Unpreserved (EP068)								
SRT-BH413A-0.5,	SRT-BH413A-1.5	**28-Oct-2018**	**02-Nov-2018**	11-Nov-2018	✓	**05-Nov-2018**	12-Dec-2018	✓
EP074A: Monocyclic Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP074)								
SRT-BH418-0.2,	SRT-BH424-0.5,	**27-Oct-2018**	**01-Nov-2018**	03-Nov-2018	✓	**02-Nov-2018**	03-Nov-2018	✓
SRT-BH425-1.0								
Soil Glass Jar - Unpreserved (EP074)								
SRT-BH413A-0.5		**28-Oct-2018**	**01-Nov-2018**	04-Nov-2018	✓	**02-Nov-2018**	04-Nov-2018	✓

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
EP074B: Oxygenated Compounds							
Soil Glass Jar - Unpreserved (EP074) SRT-BH418-0.2, SRT-BH424-0.5, SRT-BH425-1.0	**27-Oct-2018**	**01-Nov-2018**	03-Nov-2018	✓	**02-Nov-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP074) SRT-BH413A-0.5	**28-Oct-2018**	**01-Nov-2018**	04-Nov-2018	✓	**02-Nov-2018**	04-Nov-2018	✓
EP074C: Sulfonated Compounds							
Soil Glass Jar - Unpreserved (EP074) SRT-BH418-0.2, SRT-BH424-0.5, SRT-BH425-1.0	**27-Oct-2018**	**01-Nov-2018**	03-Nov-2018	✓	**02-Nov-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP074) SRT-BH413A-0.5	**28-Oct-2018**	**01-Nov-2018**	04-Nov-2018	✓	**02-Nov-2018**	04-Nov-2018	✓
EP074D: Fumigants							
Soil Glass Jar - Unpreserved (EP074) SRT-BH418-0.2, SRT-BH424-0.5, SRT-BH425-1.0	**27-Oct-2018**	**01-Nov-2018**	03-Nov-2018	✓	**02-Nov-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP074) SRT-BH413A-0.5	**28-Oct-2018**	**01-Nov-2018**	04-Nov-2018	✓	**02-Nov-2018**	04-Nov-2018	✓
EP074E: Halogenated Aliphatic Compounds							
Soil Glass Jar - Unpreserved (EP074) SRT-BH418-0.2, SRT-BH424-0.5, SRT-BH425-1.0	**27-Oct-2018**	**01-Nov-2018**	03-Nov-2018	✓	**02-Nov-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP074) SRT-BH413A-0.5	**28-Oct-2018**	**01-Nov-2018**	04-Nov-2018	✓	**02-Nov-2018**	04-Nov-2018	✓
EP074F: Halogenated Aromatic Compounds							
Soil Glass Jar - Unpreserved (EP074) SRT-BH418-0.2, SRT-BH424-0.5, SRT-BH425-1.0	**27-Oct-2018**	**01-Nov-2018**	03-Nov-2018	✓	**02-Nov-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP074) SRT-BH413A-0.5	**28-Oct-2018**	**01-Nov-2018**	04-Nov-2018	✓	**02-Nov-2018**	04-Nov-2018	✓
EP074G: Trihalomethanes							
Soil Glass Jar - Unpreserved (EP074) SRT-BH418-0.2, SRT-BH424-0.5, SRT-BH425-1.0	**27-Oct-2018**	**01-Nov-2018**	03-Nov-2018	✓	**02-Nov-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP074) SRT-BH413A-0.5	**28-Oct-2018**	**01-Nov-2018**	04-Nov-2018	✓	**02-Nov-2018**	04-Nov-2018	✓
EP074H: Naphthalene							
Soil Glass Jar - Unpreserved (EP074) SRT-BH418-0.2, SRT-BH424-0.5, SRT-BH425-1.0	**27-Oct-2018**	**01-Nov-2018**	03-Nov-2018	✓	**02-Nov-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP074) SRT-BH413A-0.5	**28-Oct-2018**	**01-Nov-2018**	04-Nov-2018	✓	**02-Nov-2018**	04-Nov-2018	✓

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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
SRT-BH425-2.0	**27-Oct-2018**	**01-Nov-2018**	10-Nov-2018	✓	**02-Nov-2018**	11-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
SRT-BH418-0.2, SRT-BH418-1.0, SRT-BH424-0.5, SRT-BH424-1.0, SRT-BH424-3.0, SRT-BH425-0.4, SRT-BH425-1.0, SRT-QCA108, SRT-QCA109	**27-Oct-2018**	**02-Nov-2018**	10-Nov-2018	✓	**05-Nov-2018**	12-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
SRT-BH413A-3.0	**28-Oct-2018**	**01-Nov-2018**	11-Nov-2018	✓	**02-Nov-2018**	11-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
SRT-BH413A-0.5, SRT-BH413A-1.5	**28-Oct-2018**	**02-Nov-2018**	11-Nov-2018	✓	**05-Nov-2018**	12-Dec-2018	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
SRT-TS107, Trip Spike Control	**22-Oct-2018**	**01-Nov-2018**	05-Nov-2018	✓	**02-Nov-2018**	05-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP080)							
SRT-TB107	**26-Oct-2018**	**01-Nov-2018**	09-Nov-2018	✓	**02-Nov-2018**	09-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP080)							
SRT-BH418-0.2, SRT-BH418-1.0, SRT-BH424-0.5, SRT-BH424-1.0, SRT-BH424-3.0, SRT-BH425-0.4, SRT-BH425-1.0, SRT-BH425-2.0, SRT-QCA108, SRT-QCA109	**27-Oct-2018**	**01-Nov-2018**	10-Nov-2018	✓	**02-Nov-2018**	10-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP071)							
SRT-BH418-0.2, SRT-BH418-1.0, SRT-BH424-0.5, SRT-BH424-1.0, SRT-BH424-3.0, SRT-BH425-0.4, SRT-BH425-1.0, SRT-QCA108, SRT-QCA109	**27-Oct-2018**	**02-Nov-2018**	10-Nov-2018	✓	**05-Nov-2018**	12-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP080)							
SRT-BH413A-0.5, SRT-BH413A-1.5, SRT-BH413A-3.0	**28-Oct-2018**	**01-Nov-2018**	11-Nov-2018	✓	**02-Nov-2018**	11-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP071)							
SRT-BH413A-0.5, SRT-BH413A-1.5	**28-Oct-2018**	**02-Nov-2018**	11-Nov-2018	✓	**05-Nov-2018**	12-Dec-2018	✓

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP080)								
SRT-TS107,	Trip Spike Control	**22-Oct-2018**	**01-Nov-2018**	05-Nov-2018	✓	**02-Nov-2018**	05-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP080)								
SRT-TB107		**26-Oct-2018**	**01-Nov-2018**	09-Nov-2018	✓	**02-Nov-2018**	09-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP080)								
SRT-BH418-0.2,	SRT-BH418-1.0,	**27-Oct-2018**	**01-Nov-2018**	10-Nov-2018	✓	**02-Nov-2018**	10-Nov-2018	✓
SRT-BH424-0.5,	SRT-BH424-1.0,							
SRT-BH424-3.0,	SRT-BH425-0.4,							
SRT-BH425-1.0,	SRT-BH425-2.0,							
SRT-QCA108,	SRT-QCA109							
Soil Glass Jar - Unpreserved (EP071)								
SRT-BH418-0.2,	SRT-BH418-1.0,	**27-Oct-2018**	**02-Nov-2018**	10-Nov-2018	✓	**05-Nov-2018**	12-Dec-2018	✓
SRT-BH424-0.5,	SRT-BH424-1.0,							
SRT-BH424-3.0,	SRT-BH425-0.4,							
SRT-BH425-1.0,	SRT-QCA108,							
SRT-QCA109								
Soil Glass Jar - Unpreserved (EP080)								
SRT-BH413A-0.5,	SRT-BH413A-1.5,	**28-Oct-2018**	**01-Nov-2018**	11-Nov-2018	✓	**02-Nov-2018**	11-Nov-2018	✓
SRT-BH413A-3.0								
Soil Glass Jar - Unpreserved (EP071)								
SRT-BH413A-0.5,	SRT-BH413A-1.5	**28-Oct-2018**	**02-Nov-2018**	11-Nov-2018	✓	**05-Nov-2018**	12-Dec-2018	✓
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080)								
SRT-TS107,	Trip Spike Control	**22-Oct-2018**	**01-Nov-2018**	05-Nov-2018	✓	**02-Nov-2018**	05-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP080)								
SRT-TB107		**26-Oct-2018**	**01-Nov-2018**	09-Nov-2018	✓	**02-Nov-2018**	09-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP080)								
SRT-BH418-0.2,	SRT-BH418-1.0,	**27-Oct-2018**	**01-Nov-2018**	10-Nov-2018	✓	**02-Nov-2018**	10-Nov-2018	✓
SRT-BH424-0.5,	SRT-BH424-1.0,							
SRT-BH424-3.0,	SRT-BH425-0.4,							
SRT-BH425-1.0,	SRT-BH425-2.0,							
SRT-QCA108,	SRT-QCA109							
Soil Glass Jar - Unpreserved (EP080)								
SRT-BH413A-0.5,	SRT-BH413A-1.5,	**28-Oct-2018**	**01-Nov-2018**	11-Nov-2018	✓	**02-Nov-2018**	11-Nov-2018	✓
SRT-BH413A-3.0								
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE Soil Jar (EP231X)								
SRT-BH424-3.0		**27-Oct-2018**	**02-Nov-2018**	25-Apr-2019	✓	**02-Nov-2018**	12-Dec-2018	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE Soil Jar (EP231X)								
SRT-BH424-3.0		**27-Oct-2018**	**02-Nov-2018**	25-Apr-2019	✓	**02-Nov-2018**	12-Dec-2018	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) SRT-BH424-3.0	**27-Oct-2018**	**02-Nov-2018**	25-Apr-2019	✓	**02-Nov-2018**	12-Dec-2018	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) SRT-BH424-3.0	**27-Oct-2018**	**02-Nov-2018**	25-Apr-2019	✓	**02-Nov-2018**	12-Dec-2018	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) SRT-BH424-3.0	**27-Oct-2018**	**02-Nov-2018**	25-Apr-2019	✓	**02-Nov-2018**	12-Dec-2018	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) SRT-RB107	**27-Oct-2018**	**02-Nov-2018**	25-Apr-2019	✓	**02-Nov-2018**	25-Apr-2019	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) SRT-RB110	**28-Oct-2018**	**02-Nov-2018**	26-Apr-2019	✓	**02-Nov-2018**	26-Apr-2019	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) SRT-RB107	**27-Oct-2018**	**----**	----	----	**01-Nov-2018**	24-Nov-2018	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) SRT-RB110	**28-Oct-2018**	**----**	----	----	**01-Nov-2018**	25-Nov-2018	✓
EP066: Polychlorinated Biphenyls (PCB)							
Amber Glass Bottle - Unpreserved (EP066) SRT-RB107	**27-Oct-2018**	**01-Nov-2018**	03-Nov-2018	✓	**05-Nov-2018**	11-Dec-2018	✓
Amber Glass Bottle - Unpreserved (EP066) SRT-RB110	**28-Oct-2018**	**01-Nov-2018**	04-Nov-2018	✓	**05-Nov-2018**	11-Dec-2018	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068) SRT-RB107	**27-Oct-2018**	**01-Nov-2018**	03-Nov-2018	✓	**05-Nov-2018**	11-Dec-2018	✓
Amber Glass Bottle - Unpreserved (EP068) SRT-RB110	**28-Oct-2018**	**01-Nov-2018**	04-Nov-2018	✓	**05-Nov-2018**	11-Dec-2018	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068) SRT-RB107	**27-Oct-2018**	**01-Nov-2018**	03-Nov-2018	✓	**05-Nov-2018**	11-Dec-2018	✓
Amber Glass Bottle - Unpreserved (EP068) SRT-RB110	**28-Oct-2018**	**01-Nov-2018**	04-Nov-2018	✓	**05-Nov-2018**	11-Dec-2018	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) SRT-RB107	**27-Oct-2018**	**01-Nov-2018**	03-Nov-2018	✓	**05-Nov-2018**	11-Dec-2018	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) SRT-RB110	**28-Oct-2018**	**01-Nov-2018**	04-Nov-2018	✓	**05-Nov-2018**	11-Dec-2018	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) SRT-RB107	**27-Oct-2018**	**01-Nov-2018**	03-Nov-2018	✓	**05-Nov-2018**	11-Dec-2018	✓
Amber Glass Bottle - Unpreserved (EP071) SRT-RB110	**28-Oct-2018**	**01-Nov-2018**	04-Nov-2018	✓	**05-Nov-2018**	11-Dec-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) SRT-RB107	**27-Oct-2018**	**02-Nov-2018**	10-Nov-2018	✓	**02-Nov-2018**	10-Nov-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) SRT-RB110	**28-Oct-2018**	**02-Nov-2018**	11-Nov-2018	✓	**02-Nov-2018**	11-Nov-2018	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) SRT-RB107	**27-Oct-2018**	**01-Nov-2018**	03-Nov-2018	✓	**05-Nov-2018**	11-Dec-2018	✓
Amber Glass Bottle - Unpreserved (EP071) SRT-RB110	**28-Oct-2018**	**01-Nov-2018**	04-Nov-2018	✓	**05-Nov-2018**	11-Dec-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) SRT-RB107	**27-Oct-2018**	**02-Nov-2018**	10-Nov-2018	✓	**02-Nov-2018**	10-Nov-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) SRT-RB110	**28-Oct-2018**	**02-Nov-2018**	11-Nov-2018	✓	**02-Nov-2018**	11-Nov-2018	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) SRT-RB107	**27-Oct-2018**	**02-Nov-2018**	10-Nov-2018	✓	**02-Nov-2018**	10-Nov-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) SRT-RB110	**28-Oct-2018**	**02-Nov-2018**	11-Nov-2018	✓	**02-Nov-2018**	11-Nov-2018	✓

Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	3	21	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	21	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	10	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	21	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	38	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	2	21	**9.52**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	21	**9.52**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	2	21	**9.52**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	1	20	**5.00**	**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		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
TRH - Semivolatile Fraction	EP071	2	21	**9.52**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	2	21	**9.52**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	**16.67**	**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	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	21	**9.52**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
TRH - Semivolatile Fraction	EP071	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	SOIL	In house: Referenced to Ahern et al 2004 - a suspension peroxide oxidation method following the 'sulfur trail' by determining the level of 1M KCL extractable sulfur and the sulfur level after oxidation of soil sulphides. The 'acidity trail' is followed by measurement of TAA, TPA and TSA. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5.
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Asbestos Identification in Soils	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Asbestos Classification and Quantitation per NEPM 2013	* EA200N	SOIL	Asbestos Classification and Quantitation per NEPM 2013 with Confirmation of Identification by AS 4964 - 2004 Gravimetric determination of Asbestos Containing Material, Fibrous Asbestos, Asbestos Fines and sample weight and calculation of percentage concentrations per NEPM protocols. Asbestos (Fines and Fibrous FA+AF) is reported as the equivalent weight in the sample received after accounting for sub-sampling (where applicable for the <7mm and/or <2mm fractions).
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, 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 (2013) Schedule B(3)
Total Phenol By Discrete Analyser	EP035G	SOIL	In house: Referenced to APHA 5530 B&D Steam distillable Phenols are reacted with 4-aminoantipyrine. The resultant colour intensity is measured by Seal
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270D 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 (2013) Schedule B(3) (Method 504)
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270D 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 (2013) Schedule B(3) (Method 504,505)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM amended 2013.
Volatile Organic Compounds	EP074	SOIL	In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 501)

Analytical Methods	Method	Matrix	Method Descriptions
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D. 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 (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM amended 2013.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-House. A portion of soil is extracted with MTBE. The extract is taken to dryness, made up in mobile phase. Analysis is by LC/MSMS, ESI 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. This method complies with the quality control definitions as stated in QSM 5.1. Data is reviewed in line with the DQOs as stated in QSM5.1
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The 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 (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample 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 (2013) Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample 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 (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A 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 the QC requirements of NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions

Preparation Methods	Method	Matrix	Method Descriptions
Drying at 85 degrees, bagging and labelling (ASS)	EN020PR	SOIL	In house
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 (2013) Schedule B(3) (Method 202)
Phenols After Microdistillation	EP035D	SOIL	In house: Referenced to APHA 5530 A, B&D. pH adjusted Steam distillable Phenolic compounds. The resultant colour intensity is measured by Discrete Analyser.
Sample Extraction for PFAS	EP231-PR	SOIL	In house
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.
Digestion for Total Recoverable Metals	EN25	WATER	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 (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

J. Grealy
9/11/18 12:00

Jessie Grealy

From: Helen Simpson
Sent: Friday, 9 November 2018 12:02 PM
To: Jessie Grealy
Subject: FW: Analysis request

Hi Jessie,

Can you please rebatch SRT_BH410_1.5 (sand – 2 containers) for the pH, CEC and clay content analysis? From ES1829955.

Kind regards,

Helen Simpson
Sample Admin, Environmental

Sydney

Clay Content → Newcastle.
Date: _____
By / Date: _____
Courier: _____
By PO / Internal Sheet:

Environmental Division
Sydney
Work Order Reference
ES1833432

Telephone : + 61-2-8784 8555

T +61 2 8784 8555
F +61 2 8784 8500
helen.simpson@alsglobal.com
277-289 Woodpark
Smithfield, NSW, 2164

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From: Houston, Barry [mailto:bhouston@golder.com.au]
Sent: Friday, 9 November 2018 11:38 AM
To: Helen Simpson <helen.simpson@alsglobal.com>; Brenda Hong <Brenda.Hong@alsglobal.com>
Cc: Sepan Mahamad <Sepan.Mahamad@alsglobal.com>
Subject: RE: Analysis request

Hi Helen

Thanks for sourcing the samples, as discussed, please use SRT_BH410_1.5 (sand – 2 containers) for the pH, CEC and clay content analysis,

Kind regards
Barry

From: Helen Simpson <helen.simpson@alsglobal.com>
Sent: Friday, 9 November 2018 11:26 AM
To: Houston, Barry <bhouston@golder.com.au>; Brenda Hong <Brenda.Hong@alsglobal.com>

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES1833432**

Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: RBonetti@golder.com.au	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9478 3901	Facsimile	: +61-2-8784 8500
Project	: SYDNEY METRO	Page	: 1 of 2
Order number	: ----	Quote number	: ES2017GOLASS0019 (SY/698/17 C V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Watertloo Station		
Sampler	:		

Dates

Date Samples Received	: 09-Nov-2018 12:00	Issue Date	: 09-Nov-2018
Client Requested Due Date	: 16-Nov-2018	Scheduled Reporting Date	: **16-Nov-2018**

Delivery Details

Mode of Delivery	: Samples On Hand	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: 4.1
Receipt Detail	:	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **This is a rebatch of ES1829955.**
- **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 absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.

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	Client sampling date / time	Client sample ID	SOIL - EA002 pH (1:5)	SOIL - EA150H-C Clay Content by Hydrometer	SOIL - ED008 Def Exchangeable Cations with pre-treatment -
ES1833432-001	06-Nov-2018 00:00	SRT_BH410_1.5	✓	✓	✓

Proactive Holding Time Report

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

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	au_accountspayable@golder.com.au

BARRY HOUSTON

- *AU Certificate of Analysis - NATA (COA)	Email	bhouston@golder.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	bhouston@golder.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	bhouston@golder.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	bhouston@golder.com.au
- Attachment - Report (SUBCO)	Email	bhouston@golder.com.au
- Chain of Custody (CoC) (COC)	Email	bhouston@golder.com.au
- EDI Format - ENMRG (ENMRG)	Email	bhouston@golder.com.au
- EDI Format - ESDAT (ESDAT)	Email	bhouston@golder.com.au

RITA BONETTI

- *AU Certificate of Analysis - NATA (COA)	Email	RBonetti@golder.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	RBonetti@golder.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	RBonetti@golder.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	RBonetti@golder.com.au
- Attachment - Report (SUBCO)	Email	RBonetti@golder.com.au
- Chain of Custody (CoC) (COC)	Email	RBonetti@golder.com.au
- EDI Format - ENMRG (ENMRG)	Email	RBonetti@golder.com.au
- EDI Format - ESDAT (ESDAT)	Email	RBonetti@golder.com.au

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1833432**	Page	: 1 of 2
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: SYDNEY METRO	Date Samples Received	: 09-Nov-2018 12:00
Order number	: .	Date Analysis Commenced	: 14-Nov-2018
C-O-C number	: ----	Issue Date	: 16-Nov-2018 12:29
Sampler	: ----		
Site	: Watertloo Station		
Quote number	: SY/698/17 C V4		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Dian Dao		Sydney Inorganics, Smithfield, NSW
Dianne Blane	Laboratory Coordinator (2IC)	Newcastle - Inorganics, Mayfield West, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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.

- 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+).

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH410_1.5	----	----	----	----
			Client sampling date / time	06-Nov-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1833432-001	--------	--------	--------	--------
				Result	----	----	----	----
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	**5.0**	----	----	----	----
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	**7**	----	----	----	----
EA152: Soil Particle Density								
ø Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	**2.60**	----	----	----	----
ED007: Exchangeable Cations								
Exchangeable Calcium	----	0.1	meq/100g	**0.8**	----	----	----	----
Exchangeable Magnesium	----	0.1	meq/100g	**0.1**	----	----	----	----
Exchangeable Potassium	----	0.1	meq/100g	**0.2**	----	----	----	----
Exchangeable Sodium	----	0.1	meq/100g	**0.1**	----	----	----	----
Cation Exchange Capacity	----	0.1	meq/100g	**1.3**	----	----	----	----
Exchangeable Sodium Percent	----	0.1	%	**8.9**	----	----	----	----

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES1833432**	Page	: 1 of 3
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: SYDNEY METRO	Date Samples Received	: 09-Nov-2018
Order number	: .	Date Analysis Commenced	: 14-Nov-2018
C-O-C number	: ----	Issue Date	: 16-Nov-2018
Sampler	: ----		
Site	: Watertloo Station		
Quote number	: SY/698/17 C V4		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

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

This Quality Control Report contains the following information:

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

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*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Dian Dao		Sydney Inorganics, Smithfield, NSW
Dianne Blane	Laboratory Coordinator (2IC)	Newcastle - Inorganics, Mayfield West, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA002: pH 1:5 (Soils) (QC Lot: 2036224)									
ES1833432-001	SRT_BH410_1.5	EA002: pH Value	----	0.1	pH Unit	5.0	5.2	1.96	0% - 20%
ED007: Exchangeable Cations (QC Lot: 2039082)									
ES1833432-001	SRT_BH410_1.5	ED007: Exchangeable Sodium Percent	----	0.1	%	8.9	8.6	2.62	0% - 20%
		ED007: Exchangeable Calcium	----	0.1	meq/100g	0.8	0.8	0.00	No Limit
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	0.1	0.1	0.00	No Limit
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.2	0.2	0.00	No Limit
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.1	0.1	0.00	No Limit
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	1.3	1.3	0.00	0% - 50%

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

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
ED007: Exchangeable Cations (QCLot: 2039082)								
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	1 meq/100g	92.0	76	120
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	1.67 meq/100g	93.4	75	115
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	0.51 meq/100g	90.2	80	120
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	0.87 meq/100g	87.4	80	120
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----
ED007: Exchangeable Sodium Percent	----	0.1	%	<0.1	----	----	----	----

Matrix Spike (MS) Report

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

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES1833432**	Page	: 1 of 4
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Telephone	: +61-2-8784 8555
Project	: SYDNEY METRO	Date Samples Received	: 09-Nov-2018
Site	: Watertloo Station	Issue Date	: 16-Nov-2018
Sampler	: ----	No. of samples received	: 1
Order number	: .	No. of samples analysed	: 1

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **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 : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA002: pH 1:5 (Soils)						
Soil Glass Jar - Unpreserved						
SRT_BH410_1.5	14-Nov-2018	13-Nov-2018	1	----	----	----

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)							
SRT_BH410_1.5	**06-Nov-2018**	**14-Nov-2018**	13-Nov-2018	×	**14-Nov-2018**	14-Nov-2018	✓
EA150: Soil Classification based on Particle Size							
Snap Lock Bag: Separate bag received (EA150H)							
SRT_BH410_1.5	**06-Nov-2018**	**----**	----	----	**14-Nov-2018**	05-May-2019	✓
EA152: Soil Particle Density							
Snap Lock Bag: Separate bag received (EA152)							
SRT_BH410_1.5	**06-Nov-2018**	**----**	----	----	**14-Nov-2018**	05-May-2019	✓
ED007: Exchangeable Cations							
Soil Glass Jar - Unpreserved (ED007)							
SRT_BH410_1.5	**06-Nov-2018**	**15-Nov-2018**	04-Dec-2018	✓	**15-Nov-2018**	04-Dec-2018	✓

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)							
Exchangeable Cations	ED007	1	4	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH (1:5)	EA002	1	1	**100.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Exchangeable Cations	ED007	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Exchangeable Cations	ED007	1	4	**25.00**	**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
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 (2013) Schedule B(3)
Particle Size Analysis by Hydrometer	EA150H	SOIL	Particle Size Analysis by Hydrometer according to AS1289.3.6.3 - 2003
Soil Particle Density	* EA152	SOIL	Soil Particle Density by AS 1289.3.5.1-2006 : Methods of testing soils for engineering purposes - Soil classification tests - Determination of the soil particle density of a soil - Standard method
Exchangeable Cations	ED007	SOIL	In house: Referenced to Rayment & Lyons (2011) 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 (2013) Schedule B(3) (Method 301)

Preparation Methods	Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method	ED007PR	SOIL	In house: Referenced to Rayment & Higginson (1992) 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.
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.

16/11/18

Fadi Soro

FADI 9/11/18 11am

From: Tyler Cachia
Sent: Friday, 9 November 2018 10:00 AM
To: Samples Sydney
Cc: Loren Schiavon
Subject: FW: Rebatch of ES1832159

Can we please get this rebatch as per email below.

Kind Regards,

Tyler Cachia

Client Services Officer, Environmental
Sydney

T +61 2 8784 8555 D +61 2 8784 8501
F +61 2 8784 8500
tyler.cachia@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

Subscribe

Environmental Division
Sydney
Work Order Reference
ES1833627

Telephone : +61-2-8784 8555

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From: Houston, Barry [mailto:bhouston@golder.com.au]
Sent: Thursday, 8 November 2018 6:57 PM
To: ALSEnviro Sydney <ALSEnviro.Sydney@ALSGlobal.com>; Sepan Mahamad <Sepan.Mahamad@alsglobal.com>; Brenda Hong <Brenda.Hong@alsglobal.com>
Cc: Bonetti, Rita <RBonetti@golder.com.au>
Subject: Rebatch of ES1832159

Hi

Can we get the following samples scheduled for TCLP analysis as per the table:

	Lab Report# ES1832159			
	Sample Ref		TCLP Analysis	Lab Report#
1	SRT_BH413A 0.5m	1	Lead	003 2810 18
2	SRT_BH424 0.5m	2	Lead	015 2710
3	SRT_BH424 1.0m	3	Lead	016 2710
4	SRT_BH425 0.4m	4	Lead	020 2710
4	SRT_BH425 0.4m		BaP	020
5	SRT_BH425 1.0m	5	Lead	021 2710
5	SRT_BH425 1.0m		BaP	021
6	QCA109	6	Lead	029 2710

S621-624

#3, 15-16, 20, 21, 29

If there are any problems please let me know

Thanks

Barry

Barry Houston (BSc. MSc.)
Senior Environmental Scientist

124 Pacific Highway, St. Leonards, New South Wales 2065, Australia (PO Box 1302, Crows Nest NSW 1585)
T: +61 2 9478 3900 | **D:** +61 2 9478 3945 | **M:** +61 416 826 175 | **golder.com**
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SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES1833627**

Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: RBonetti@golder.com.au	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9478 3901	Facsimile	: +61-2-8784 8500
Project	: Sydney Metro	Page	: 1 of 2
Order number	: ----	Quote number	: ES2017GOLASS0019 (SY/698/17 C V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	:		
Sampler	:		

Dates

Date Samples Received	: 09-Nov-2018 16:13	Issue Date	: 12-Nov-2018
Client Requested Due Date	: 16-Nov-2018	Scheduled Reporting Date	: **16-Nov-2018**

Delivery Details

Mode of Delivery	: Pickup	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: 4.1'C
Receipt Detail	:	No. of samples received / analysed	: 6 / 6

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **This is rebatch of ES1832159**
- **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 absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.

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	Client sampling date / time	Client sample ID	SOIL - EG005C Leachable Metals by ICPAES	SOIL - EN33a TCLP Leachate	SOIL - EP075 SIM PAH only SIM - PAH only
ES1833627-001	28-Oct-2018 00:00	SRT-BH413A-0.5	✓	✓	
ES1833627-002	27-Oct-2018 00:00	SRT-BH424-0.5	✓	✓	
ES1833627-003	27-Oct-2018 00:00	SRT-BH424-1.0	✓	✓	
ES1833627-004	27-Oct-2018 00:00	SRT-BH425-0.4	✓	✓	✓
ES1833627-005	27-Oct-2018 00:00	SRT-BH425-1.0	✓	✓	✓
ES1833627-006	27-Oct-2018 00:00	SRT-QCA109	✓	✓	

Proactive Holding Time Report

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

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	au_accountspayable@golder.com.au

BARRY YAN

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

RITA BONETTI

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

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1833627**	Page	: 1 of 7
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 09-Nov-2018 16:13
Order number	: .	Date Analysis Commenced	: 13-Nov-2018
C-O-C number	: ----	Issue Date	: 16-Nov-2018 15:26
Sampler	: ----		
Site	:		
Quote number	: SY/698/17 C V4		
No. of samples received	: 6		
No. of samples analysed	: 6		

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

This 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*
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH413A-0.5	SRT-BH424-0.5	SRT-BH424-1.0	SRT-BH425-0.4	SRT-BH425-1.0
			Client sampling date / time	28-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1833627-001	ES1833627-002	ES1833627-003	ES1833627-004	ES1833627-005
				Result	Result	Result	Result	Result
EN33: TCLP Leach								
Initial pH	----	0.1	pH Unit	**7.5**	**7.5**	**6.6**	**9.0**	**7.3**
After HCl pH	----	0.1	pH Unit	**1.6**	**1.5**	**1.5**	**1.6**	**1.5**
Extraction Fluid Number	----	1	-	**1**	**1**	**1**	**1**	**1**
Final pH	----	0.1	pH Unit	**5.0**	**5.0**	**5.0**	**5.1**	**4.9**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-QCA109	----	----	----	----
				Client sampling date / time	27-Oct-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1833627-006	--------	--------	--------	--------
					Result	----	----	----	----
EN33: TCLP Leach									
Initial pH	----	0.1	pH Unit		**9.2**	----	----	----	----
After HCl pH	----	0.1	pH Unit		**1.6**	----	----	----	----
Extraction Fluid Number	----	1	-		**1**	----	----	----	----
Final pH	----	0.1	pH Unit		**5.0**	----	----	----	----

Analytical Results

Sub-Matrix: TCLP LEACHATE (Matrix: WATER)				Client sample ID	SRT-BH413A-0.5	SRT-BH424-0.5	SRT-BH424-1.0	SRT-BH425-0.4	SRT-BH425-1.0
				Client sampling date / time	28-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00	27-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1833627-001	ES1833627-002	ES1833627-003	ES1833627-004	ES1833627-005
					Result	Result	Result	Result	Result
EG005C: Leachable Metals by ICPAES									
Lead	7439-92-1	0.1	mg/L		**0.4**	<0.1	<0.1	**2.9**	**0.4**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Benzo(a)pyrene	50-32-8	0.5	µg/L		----	----	----	<0.5	<0.5
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		----	----	----	**20.5**	**26.6**
2-Chlorophenol-D4	93951-73-6	1.0	%		----	----	----	**45.3**	**61.3**
2.4.6-Tribromophenol	118-79-6	1.0	%		----	----	----	**70.6**	**70.8**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		----	----	----	**76.7**	**80.5**
Anthracene-d10	1719-06-8	1.0	%		----	----	----	**63.2**	**71.0**
4-Terphenyl-d14	1718-51-0	1.0	%		----	----	----	**78.2**	**84.5**

Analytical Results

Sub-Matrix: **TCLP LEACHATE** (Matrix: **WATER**)				Client sample ID	**SRT-QCA109**	**----**	**----**	**----**	**----**
				Client sampling date / time	27-Oct-2018 00:00	----	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*		**ES1833627-006**	**--------**	**--------**	**--------**	**--------**
					Result	----	----	----	----
EG005C: Leachable Metals by ICPAES									
Lead	7439-92-1	0.1	mg/L		**0.2**	**----**	**----**	**----**	**----**

Surrogate Control Limits

Sub-Matrix: **TCLP LEACHATE**

Compound	CAS Number	Recovery Limits (%) Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES1833627**	Page	: 1 of 3
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 09-Nov-2018
Order number	: .	Date Analysis Commenced	: 13-Nov-2018
C-O-C number	: ----	Issue Date	: 16-Nov-2018
Sampler	: ----		
Site	:		
Quote number	: SY/698/17 C V4		
No. of samples received	: 6		
No. of samples analysed	: 6		

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

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

This Quality Control Report contains the following information:

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

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*
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005C: Leachable Metals by ICPAES (QC Lot: 2035366)									
ES1833627-001	SRT-BH413A-0.5	EG005C: Lead	7439-92-1	0.1	mg/L	0.4	0.4	0.00	No Limit
ES1833638-001	Anonymous	EG005C: Lead	7439-92-1	0.1	mg/L	<0.1	<0.1	0.00	No Limit

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

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EN33: TCLP Leach (QCLot: 2032984)								
EN33a: Initial pH	----	0.1	pH Unit	1.0	----	----	----	----
EN33a: After HCl pH	----	0.1	pH Unit	1.0	----	----	----	----
EN33a: Final pH	----	0.1	pH Unit	1.0	----	----	----	----

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005C: Leachable Metals by ICPAES (QCLot: 2035366)								
EG005C: Lead	7439-92-1	0.1	mg/L	<0.1	0.1 mg/L	103	80	118
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2035389)								
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	88.7	63	117

Matrix Spike (MS) Report

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

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005C: Leachable Metals by ICPAES (QCLot: 2035366)							
ES1833627-002	SRT-BH424-0.5	EG005C: Lead	7439-92-1	1 mg/L	106	70	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES1833627**	Page	: 1 of 5
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 09-Nov-2018
Site	:	Issue Date	: 16-Nov-2018
Sampler	: ----	No. of samples received	: 6
Order number	: .	No. of samples analysed	: 6

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.**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EN33: TCLP Leach						
Non-Volatile Leach: 14 day HT(e.g. SV organics)						
SRT-BH425-0.4, SRT-BH425-1.0	13-Nov-2018	10-Nov-2018	**3**	----	----	----

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	11	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	11	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

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

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

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

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

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EN33: TCLP Leach							
Non-Volatile Leach: 14 day HT(e.g. SV organics) (EN33a)							
SRT-BH425-0.4, SRT-BH425-1.0	**27-Oct-2018**	**13-Nov-2018**	10-Nov-2018	×	**----**	----	----
Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN33a)							
SRT-BH424-0.5, SRT-BH424-1.0, SRT-QCA109	**27-Oct-2018**	**13-Nov-2018**	25-Apr-2019	✓	**----**	----	----
Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN33a)							
SRT-BH413A-0.5	**28-Oct-2018**	**13-Nov-2018**	26-Apr-2019	✓	**----**	----	----

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005C: Leachable Metals by ICPAES								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG005C)								
SRT-BH413A-0.5,	SRT-BH424-0.5,	**13-Nov-2018**	**14-Nov-2018**	12-May-2019	✓	**14-Nov-2018**	12-May-2019	✓
SRT-BH424-1.0,	SRT-BH425-0.4,							
SRT-BH425-1.0,	SRT-QCA109							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075(SIM))								
SRT-BH425-0.4,	SRT-BH425-1.0	**13-Nov-2018**	**14-Nov-2018**	20-Nov-2018	✓	**14-Nov-2018**	24-Dec-2018	✓

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	
Method Blanks (MB)							
TCLP for Non & Semivolatile Analytes	EN33a	1	11	**9.09**	**9.09**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Leachable Metals by ICPAES	EG005C	2	12	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	11	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Leachable Metals by ICPAES	EG005C	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Leachable Metals by ICPAES	EG005C	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Leachable Metals by ICPAES	EG005C	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	11	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
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 (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
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 (2013) Schedule B(3)
TCLP for Non & Semivolatile Analytes	EN33a	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.
Separatory Funnel Extraction of Liquids	ORG14	SOIL	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.

CHAIN OF CUSTODY & ANALYSIS REQUEST

Page _1_ of __1__

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: 1791865 – SM TSE

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 / Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	W-26 (TRH / BTEX / PAHs / Dissolved Metals)	EP074 (VOCs)	NT-01 & 02A (Ca, Mg, Na, K, Cl, SO4, Alkalinity & Fluoride	NT11 (Total nitrogen and total phosphorus)	EK071G (Reactive Phosphorus)	EK055G (Ammonia as N)	EP231X (PFAS full suite)	W-13 (OCPs / OPPs / PCBs)	EP075 (Speciated Phenols)	EP080 BTEXN	W-18 (TRH (c6-C10) / BTEXN)
1	SRT-BH419	28/10/18		X		10	X					✓						
2	SRT-BH426	28/10/18		X		12	X					✓						
3	SRT-GMW1A	28/10/18		X		10	X					✓						
4	SRT-GMW2A	28/10/18		X		10	X					✓						
5	SRT-QCA200	28/10/18		X		10	X					✓						
6	SRT-TB200			X		1	X											✓
7	SRT-TS200			X		1	X										✓	

Additional Report Formats

NEPM
CSV
ESDAT
DQO
GO, Guidelines ---------
Others _____

Notes/Guidelines/LOR/ Special instructions

EXTRA VOLUME FOR LAB QAQC

Environmental Division
Sydney
Work Order Reference
ES1832164



Telephone : +61-2-8784 8555

Relinquished By:	Date/Time: 29/10/18	Received By:	Date/Time: 29/10/18
Relinquished By:	Date/Time:	Received By:	Date/Time: 1500 22
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD

updated COC thirdly
31/10/18 09:00

CHAIN OF CUSTODY & ANALYSIS REQUEST (COC08)

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: 1791865 – SM TSE

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 / Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	W-26 (TRH / BTEX / PAHs / Dissolved Metals)	EP074 (VOCs)	NT-01 & 02A (Ca, Mg, Na, K, Cl, SO4, Alkalinity & Fluoride	NT11 (Total nitrogen and total phosphorus)	EK071G (Reactive Phosphorus)	EK055G (Ammonia as N)	EP231X (PFAS full suite)	W-13 (OCPs / OPPs / PCBs)	EP075 (Phenols - TOTAL)		W-18 (TRH (c6-C10) / BTEXN)	Notes/Guidelines/LOR/ Special instructions
1	SRT-BH419	28/10/18		X		10		X	X	X	X	X	X	X	X	X			
2	SRT-BH426	28/10/18		X		12		X	X	X	X	X	X	X	X	X			EXTRA VOLUME FOR LAB QAQC
3	SRT-GMW1A	28/10/18		X		10		X	X	X	X	X	X	X	X	X			
4	SRT-GMW2A	28/10/18		X		10		X	X	X	X	X	X	X	X	X			
5	SRT-QCA200	28/10/18		X		10		X	X	X	X	X	X	X	X	X			
6	SRT-TB200			X		1												X	
7	SRT-TS200			X		1												X	

ANALYSIS REQUESTED

Additional Report Formats
- ☐ NEPM
- ☑ CSV
- ☑ ESDAT
- ☐ DQO
- ☐ GO, Guidelines ———
- ☐ Others ———

Environmental Division Sydney
Work Order Reference
ES1832164

Telephone : +61-2-8784 8555

Relinquished By: Rita Bonetti	Date/Time: 29/10/2018	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*
Comments / Subcontracting details: COC Golder review: as per proposal			

Fadi Soro

From: ALSEnviro Sydney
Sent: Wednesday, 31 October 2018 8:41 AM
To: Fadi Soro
Subject: FW: Updated Golder COC (arrived yesterday)
Attachments: 1791865_COC_Primary Lab_Water_COC08.docx; 1791865_COC_Primary Lab_Water_COC08.pdf

Hi Fadi,

See attached Golder COCs for samples arrived yesterday or Monday.

Cheers!

Grace White
Client Services Officer, Environmental
Sydney

T +61 2 8784 8555 D +61 2 8784 8531
F +61 2 8784 8500
grace.white@alsglobal.com
277-289 Woodpark Road
Smithfield, NSW, 2164

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From: Houston, Barry [mailto:bhouston@golder.com.au]
Sent: Tuesday, 30 October 2018 6:26 PM
To: ALSEnviro Sydney <ALSEnviro.Sydney@ALSGlobal.com>; Sepan Mahamad <Sepan.Mahamad@alsglobal.com>; Brenda Hong <Brenda.Hong@alsglobal.com>
Cc: Bonetti, Rita <RBonetti@golder.com.au>
Subject:

Hi

Please find attached an updated COC for water samples which were sent to the laboratory yesterday

Please let us know if there are any queries

Regards
Barry

Barry Houston (BSc. MSc.)
Senior Environmental Scientist

124 Pacific Highway, St. Leonards, New South Wales 2065, Australia (PO Box 1302, Crows Nest NSW 1585)
T: +61 2 9478 3900 | D: +61 2 9478 3945 | M: +61 416 826 175 | golder.com
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SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES1832164**

Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: RBonetti@golder.com.au	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9478 3901	Facsimile	: +61-2-8784 8500
Project	: Sydney Metro	Page	: 1 of 3
Order number	: .	Quote number	: ES2017GOLASS0019 (SY/698/17 C V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: 1791865 - SM TSE		
Sampler	:		

Dates

Date Samples Received	: 26-Oct-2018 15:00	Issue Date	: 01-Nov-2018
Client Requested Due Date	: 06-Nov-2018	Scheduled Reporting Date	: **06-Nov-2018**

Delivery Details

Mode of Delivery	: Pickup	Security Seal	: Intact.
No. of coolers/boxes	: 5	Temperature	: 2.2 - Ice present
Receipt Detail	:	No. of samples received / analysed	: 7 / 7

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
- 31/10/18: This is an updated SRN which indicates the addition of remaining analysis and the new scheduled release date for this work order.
- 1/11/18: This is an updated SRN which indicates the addition of total phenols analysis for this workorder.
- **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 absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.

Sample Container(s)/Preservation Non-Compliances

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

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

Summary of Sample(s) and Requested Analysis

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

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EK055G Ammonia as N By Discrete Analyser	WATER - EK071G Reactive Phosphorus by Discrete analyser	WATER - EP074 (water) Volatile Organic Compounds	WATER - NT-01 & 02A Ca, Mg, Na, K, Cl, SO4, Alkalinity & Fluoride	WATER - NT-11 Total Nitrogen and Total Phosphorus	WATER - W-13 OC/OP/PCB	WATER - W-26 TRH/BTEXN/PAH/8 Metals
ES1832164-001	28-Oct-2018 00:00	SRT-BH419	✓	✓	✓	✓	✓	✓	✓
ES1832164-002	28-Oct-2018 00:00	SRT-BH426	✓	✓	✓	✓	✓	✓	✓
ES1832164-003	28-Oct-2018 00:00	SRT-GMW1A	✓	✓	✓	✓	✓	✓	✓
ES1832164-004	28-Oct-2018 00:00	SRT-GMW2A	✓	✓	✓	✓	✓	✓	✓
ES1832164-005	28-Oct-2018 00:00	SRT-QCA200	✓	✓	✓	✓	✓	✓	✓

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EP035G Total Phenol by Discrete Analyser	WATER - EP080 BTEXN	WATER - EP231X PFAS - Full Suite (28 analytes)	WATER - W-18 TRH(C6 - C9)/BTEXN
ES1832164-001	28-Oct-2018 00:00	SRT-BH419	✓		✓	
ES1832164-002	28-Oct-2018 00:00	SRT-BH426	✓		✓	
ES1832164-003	28-Oct-2018 00:00	SRT-GMW1A	✓		✓	
ES1832164-004	28-Oct-2018 00:00	SRT-GMW2A	✓		✓	
ES1832164-005	28-Oct-2018 00:00	SRT-QCA200	✓		✓	
ES1832164-006	30-Oct-2018 00:00	SRT-TB200				✓
ES1832164-007	30-Oct-2018 00:00	SRT-TS200		✓		

Proactive Holding Time Report

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

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

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received Date	Samples Received Evaluation	Instructions Received Date	Instructions Received Evaluation
EK071G: Reactive Phosphorus as P-By Discrete Analyser							
SRT-BH419	Clear Plastic Bottle - Natural	----	30-Oct-2018	26-Oct-2018	✓	31-Oct-2018	×
SRT-BH426	Clear Plastic Bottle - Natural	----	30-Oct-2018	26-Oct-2018	✓	31-Oct-2018	×
SRT-GMW1A	Clear Plastic Bottle - Natural	----	30-Oct-2018	26-Oct-2018	✓	31-Oct-2018	×
SRT-GMW2A	Clear Plastic Bottle - Natural	----	30-Oct-2018	26-Oct-2018	✓	31-Oct-2018	×
SRT-QCA200	Clear Plastic Bottle - Natural	----	30-Oct-2018	26-Oct-2018	✓	31-Oct-2018	×

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	au_accountspayable@golder.com.au

BARRY HOUSTON

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

RITA BONETTI

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

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1832164**	Page	: 1 of 13
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 26-Oct-2018 15:00
Order number	: .	Date Analysis Commenced	: 30-Oct-2018
C-O-C number	: ----	Issue Date	: 06-Nov-2018 17:09
Sampler	: ----		
Site	: 1791865 - SM TSE		
Quote number	: SY/698/17 C V4		
No. of samples received	: 7		
No. of samples analysed	: 7		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

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*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini		Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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.

- EK071G: It has been noted that Reactive P is greater than TKN for sample No 2, however this difference is within the limits of experimental variation.
- EP080/EP074: Sample TRIP SPIKE contains volatile compounds spiked into the sample containers prior to dispatch from the laboratory. BTEX compounds spiked at 20 ug/L and C6-C9 spiked at 520 ug/L (theoretical), 460 ug/L (average quantifiable).
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-BH419	SRT-BH426	SRT-GMW1A	SRT-GMW2A	SRT-QCA200
				Client sampling date / time	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832164-001	ES1832164-002	ES1832164-003	ES1832164-004	ES1832164-005
					Result	Result	Result	Result	Result
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		81	89	41	48	45
Total Alkalinity as CaCO3	----	1	mg/L		81	89	41	48	45
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		60	54	272	50	46
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		43	43	72	34	34
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		56	61	131	37	38
Magnesium	7439-95-4	1	mg/L		11	8	25	7	8
Sodium	7440-23-5	1	mg/L		43	35	81	29	30
Potassium	7440-09-7	1	mg/L		14	12	30	6	6
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	0.0001	0.0005	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	0.002	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		<0.001	0.002	0.004	0.001	0.001
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	0.016	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L		0.001	0.003	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		0.048	0.073	0.555	0.058	0.058
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		0.2	0.2	<0.1	0.5	0.5
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		0.03	0.02	0.03	0.03	0.02
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		22.7	17.2	73.0	13.6	13.7
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		1.4	0.2	<0.1	0.8	0.9
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		24.1	17.4	73.0	14.4	14.6

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-BH419	SRT-BH426	SRT-GMW1A	SRT-GMW2A	SRT-QCA200
				Client sampling date / time	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832164-001	ES1832164-002	ES1832164-003	ES1832164-004	ES1832164-005
					Result	Result	Result	Result	Result
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.27**	**0.49**	**0.02**	**0.03**	**0.03**
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	**0.52**	<0.01	**0.03**	**0.03**
EN055: Ionic Balance									
Total Anions	----	0.01	meq/L		**5.70**	**5.35**	**13.7**	**3.93**	**3.80**
Total Cations	----	0.01	meq/L		**5.93**	**5.53**	**12.9**	**3.84**	**4.01**
Ionic Balance	----	0.01	%		**1.93**	**1.71**	**3.17**	**1.21**	**2.79**
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	0.05	mg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP066: Polychlorinated Biphenyls (PCB)									
^ Total Polychlorinated biphenyls	----	1	µg/L		<1	<1	<1	<1	<1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
beta-BHC	319-85-7	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
gamma-BHC	58-89-9	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
delta-BHC	319-86-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
trans-Chlordane	5103-74-2	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
alpha-Endosulfan	959-98-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
cis-Chlordane	5103-71-9	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	60-57-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDE	72-55-9	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Endrin	72-20-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
beta-Endosulfan	33213-65-9	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDD	72-54-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Endrin aldehyde	7421-93-4	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
4.4`-DDT	50-29-3	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
Endrin ketone	53494-70-5	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	72-43-5	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
^ Total Chlordane (sum)	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-BH419	SRT-BH426	SRT-GMW1A	SRT-GMW2A	SRT-QCA200
				Client sampling date / time	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832164-001	ES1832164-002	ES1832164-003	ES1832164-004	ES1832164-005
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Demeton-S-methyl	919-86-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Monocrotophos	6923-22-4	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
Dimethoate	60-51-5	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon	333-41-5	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Parathion-methyl	298-00-0	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
Malathion	121-75-5	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Fenthion	55-38-9	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos	2921-88-2	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Parathion	56-38-2	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
Pirimphos-ethyl	23505-41-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Chlorfenvinphos	470-90-6	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Bromophos-ethyl	4824-78-6	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Fenamiphos	22224-92-6	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Prothiofos	34643-46-4	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	563-12-2	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Carbophenothion	786-19-6	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos Methyl	86-50-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	5	µg/L		<5	<5	<5	<5	<5
Isopropylbenzene	98-82-8	5	µg/L		<5	<5	<5	<5	<5
n-Propylbenzene	103-65-1	5	µg/L		<5	<5	<5	<5	<5
1.3.5-Trimethylbenzene	108-67-8	5	µg/L		<5	<5	<5	<5	<5
sec-Butylbenzene	135-98-8	5	µg/L		<5	<5	<5	<5	<5
1.2.4-Trimethylbenzene	95-63-6	5	µg/L		<5	<5	<5	<5	<5
tert-Butylbenzene	98-06-6	5	µg/L		<5	<5	<5	<5	<5
p-Isopropyltoluene	99-87-6	5	µg/L		<5	<5	<5	<5	<5
n-Butylbenzene	104-51-8	5	µg/L		<5	<5	<5	<5	<5
EP074B: Oxygenated Compounds									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-BH419	SRT-BH426	SRT-GMW1A	SRT-GMW2A	SRT-QCA200
				Client sampling date / time	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832164-001	ES1832164-002	ES1832164-003	ES1832164-004	ES1832164-005
					Result	Result	Result	Result	Result
EP074B: Oxygenated Compounds - Continued									
Vinyl Acetate	108-05-4	50	µg/L		<50	<50	<50	<50	<50
2-Butanone (MEK)	78-93-3	50	µg/L		<50	<50	<50	<50	<50
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L		<50	<50	<50	<50	<50
2-Hexanone (MBK)	591-78-6	50	µg/L		<50	<50	<50	<50	<50
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	5	µg/L		<5	<5	<5	<5	<5
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L		<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L		<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L		<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L		<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	50	µg/L		<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L		<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L		<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L		<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L		<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L		<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L		<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L		<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L		<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L		<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L		<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L		<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L		<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L		<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L		<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L		<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L		<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L		<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-BH419	SRT-BH426	SRT-GMW1A	SRT-GMW2A	SRT-QCA200
				Client sampling date / time	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832164-001	ES1832164-002	ES1832164-003	ES1832164-004	ES1832164-005
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L		<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L		<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	<5	<5
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	<5	<5
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	<5	<5
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	<5	<5
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	<5	<5
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	**14**	**14**
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L		<5	<5	<5	<5	<5
EP074H: Naphthalene									
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-BH419	SRT-BH426	SRT-GMW1A	SRT-GMW2A	SRT-QCA200
				Client sampling date / time	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832164-001	ES1832164-002	ES1832164-003	ES1832164-004	ES1832164-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-BH419	SRT-BH426	SRT-GMW1A	SRT-GMW2A	SRT-QCA200
				Client sampling date / time	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832164-001	ES1832164-002	ES1832164-003	ES1832164-004	ES1832164-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**0.02**	**0.02**	**0.07**	**0.03**	**0.03**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.02**	**0.40**	**0.41**	**0.09**	**0.09**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.03**	**0.04**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.01**	**0.01**	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.02**	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-BH419	SRT-BH426	SRT-GMW1A	SRT-GMW2A	SRT-QCA200
				Client sampling date / time	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832164-001	ES1832164-002	ES1832164-003	ES1832164-004	ES1832164-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.10**	**0.47**	**0.48**	**0.12**	**0.12**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.04**	**0.42**	**0.48**	**0.12**	**0.12**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.08**	**0.47**	**0.48**	**0.12**	**0.12**
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		**109**	**99.8**	**118**	**114**	**107**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		**86.5**	**86.8**	**89.4**	**103**	**90.3**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		**77.6**	**78.2**	**84.9**	**91.6**	**74.7**
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**102**	**97.6**	**110**	**99.8**	**96.1**
Toluene-D8	2037-26-5	5	%		**93.3**	**99.9**	**100**	**95.9**	**92.8**
4-Bromofluorobenzene	460-00-4	5	%		**90.6**	**99.0**	**95.8**	**95.4**	**90.9**
EP075(SIM)S: Phenolic Compound Surrogates									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-BH419	SRT-BH426	SRT-GMW1A	SRT-GMW2A	SRT-QCA200
				Client sampling date / time	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00	28-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832164-001	ES1832164-002	ES1832164-003	ES1832164-004	ES1832164-005
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
Phenol-d6	13127-88-3	1.0	%		26.3	27.4	26.1	23.5	25.4
2-Chlorophenol-D4	93951-73-6	1.0	%		63.8	66.3	62.2	64.6	59.7
2.4.6-Tribromophenol	118-79-6	1.0	%		76.4	70.3	76.9	71.2	45.6
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		72.1	75.4	77.0	79.5	71.5
Anthracene-d10	1719-06-8	1.0	%		97.0	86.4	93.6	89.0	90.7
4-Terphenyl-d14	1718-51-0	1.0	%		95.2	79.7	88.5	94.0	85.2
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		103	99.0	111	101	97.1
Toluene-D8	2037-26-5	2	%		96.1	103	103	99.2	95.8
4-Bromofluorobenzene	460-00-4	2	%		95.2	103	102	99.0	96.2
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		104	111	108	112	111
13C8-PFOA	----	0.02	%		103	99.8	101	104	101

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-TB200	SRT-TS200	----	----	----
				Client sampling date / time	30-Oct-2018 00:00	30-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1832164-006	ES1832164-007	--------	--------	--------
					Result	Result	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	**14**	----	----	----
Toluene	108-88-3	2	µg/L		<2	**16**	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	**16**	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	**16**	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	**15**	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	**31**	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	**77**	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	**17**	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**98.2**	**97.3**	----	----	----
Toluene-D8	2037-26-5	2	%		**101**	**90.0**	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**98.8**	**93.5**	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	29	129
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES1832164**	Page	: 1 of 21
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 26-Oct-2018
Order number	: .	Date Analysis Commenced	: 30-Oct-2018
C-O-C number	: ----	Issue Date	: 06-Nov-2018
Sampler	: ----		
Site	: 1791865 - SM TSE		
Quote number	: SY/698/17 C V4		
No. of samples received	: 7		
No. of samples analysed	: 7		

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

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

This Quality Control Report contains the following information:

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

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*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini		Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
ED037P: Alkalinity by PC Titrator (QC Lot: 2012455)									
ES1832168-005	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	42	41	2.62	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	42	41	2.62	0% - 20%
ES1832164-001	SRT-BH419	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	81	77	4.96	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	81	77	4.96	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 2012469)									
ES1832164-001	SRT-BH419	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	60	59	1.82	0% - 20%
ES1832287-019	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	394	395	0.00	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 2012470)									
ES1832164-001	SRT-BH419	ED045G: Chloride	16887-00-6	1	mg/L	43	44	2.96	0% - 20%
ES1832287-019	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	3660	3680	0.630	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 2013155)									
EW1804418-002	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	5	6	0.00	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	7	7	0.00	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	22	22	0.00	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	<1	<1	0.00	No Limit
EW1804417-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	41	40	0.00	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	10	9	0.00	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	24	24	0.00	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	1	1	0.00	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2013154)									

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2013154) - continued									
EW1804418-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.006	0.006	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.020	0.022	7.22	No Limit
EW1804417-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 2013156)									
ES1832164-002	SRT-BH426	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EK040P: Fluoride by PC Titrator (QC Lot: 2012453)									
ES1831759-002	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	<0.1	0.00	No Limit
ES1832164-001	SRT-BH419	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.2	0.2	0.00	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 2012511)									
ES1832164-001	SRT-BH419	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.03	0.04	0.00	No Limit
EW1804455-005	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.01	0.00	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 2012510)									
ES1832164-005	SRT-QCA200	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	13.7	13.8	0.487	0% - 20%
ES1832164-001	SRT-BH419	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	22.7	22.9	0.776	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 2012514)									
ES1832148-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.6	0.7	0.00	No Limit
ES1832301-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.4	0.3	0.00	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 2012515)									
ES1832148-003	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.14	0.14	0.00	0% - 50%
ES1832301-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.03	0.03	0.00	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 2010320)									
ES1832223-002	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
ES1832223-007	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EP035G: Total Phenol by Discrete Analyser (QC Lot: 2019446)									
ES1832164-001	SRT-BH419	EP035G: Phenols (Total)	----	0.05	mg/L	<0.05	<0.05	0.00	No Limit
ES1832287-005	Anonymous	EP035G: Phenols (Total)	----	0.05	mg/L	<0.05	<0.05	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2012277)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2012277) - continued									
ES1832164-002	SRT-BH426	EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	<1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2012275)									
ES1832164-002	SRT-BH426	EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	<2.0	0.00	No Limit
		EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	<2.0	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2012275)									
ES1832164-002	SRT-BH426	EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2012275) - continued									
ES1832164-002	SRT-BH426	EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	<2.0	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	<2.0	0.00	No Limit
		EP068: Parathion	56-38-2	2	µg/L	<2.0	<2.0	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2015008)									
ES1832157-002	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.00	No Limit
ES1832375-002	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.00	No Limit
EP074B: Oxygenated Compounds (QC Lot: 2015008)									
ES1832157-002	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.00	No Limit
ES1832375-002	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.00	No Limit
EP074C: Sulfonated Compounds (QC Lot: 2015008)									
ES1832157-002	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.00	No Limit
ES1832375-002	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.00	No Limit
EP074D: Fumigants (QC Lot: 2015008)									
ES1832157-002	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074D: Fumigants (QC Lot: 2015008) - continued									
ES1832157-002	Anonymous	EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.00	No Limit
ES1832375-002	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2015008)									
ES1832157-002	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.00	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.00	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.00	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.00	No Limit
ES1832375-002	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.00	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2015008) - continued									
ES1832375-002	Anonymous	EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.00	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.00	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.00	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 2015008)									
ES1832157-002	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.00	No Limit
ES1832375-002	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.00	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP074F: Halogenated Aromatic Compounds (QC Lot: 2015008) - continued									
ES1832375-002	Anonymous	EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 2015008)									
ES1832157-002	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.00	No Limit
ES1832375-002	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.00	No Limit
EP074H: Naphthalene (QC Lot: 2015008)									
ES1832157-002	Anonymous	EP074: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
ES1832375-002	Anonymous	EP074: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2012276)									
ES1832164-002	SRT-BH426	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2012274)									
ES1832164-002	SRT-BH426	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.00	No Limit
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2015007)									
ES1832157-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
ES1832375-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2012274)									
ES1832164-002	SRT-BH426	EP071: >C10 - C16 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2015007)									
ES1832157-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
ES1832375-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 2015007)									
ES1832157-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
ES1832375-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2013169)									
EP1812667-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP1812717-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2013169)									
EP1812667-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2013169) - continued									
EP1812667-001	Anonymous	EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP1812717-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2013169)									
EP1812667-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP1812717-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2013169) - continued									
EP1812717-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2013169)									
EP1812667-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP1812717-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 2013169)									
EP1812667-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
EP1812717-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit

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

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

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
ED037P: Alkalinity by PC Titrator (QCLot: 2012455)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	99.4	81	111
				----	50 mg/L	99.6	70	130
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 2012469)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	101	82	122
ED045G: Chloride by Discrete Analyser (QCLot: 2012470)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	97.8	81	127
				<1	1000 mg/L	102	81	127
ED093F: Dissolved Major Cations (QCLot: 2013155)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	95.5	80	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	96.6	90	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	93.4	82	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	96.5	85	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 2013154)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	96.5	85	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	93.8	84	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	92.0	85	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.2	81	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	90.3	83	111
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	95.0	82	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	93.6	81	117
EG035F: Dissolved Mercury by FIMS (QCLot: 2013156)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	91.8	83	105
EK040P: Fluoride by PC Titrator (QCLot: 2012453)								
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	101	82	116
EK055G: Ammonia as N by Discrete Analyser (QCLot: 2012511)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	98.3	90	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 2012510)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	102	91	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2012514)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	96.9	69	101
				<0.1	1 mg/L	102	70	118
				<0.1	5 mg/L	108	74	118
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2012515)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2012515) - continued								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	93.5	71	101
				<0.01	0.442 mg/L	105	72	108
				<0.01	1 mg/L	110	78	118
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 2010320)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	106	85	117
EP035G: Total Phenol by Discrete Analyser (QCLot: 2019446)								
EP035G: Phenols (Total)	----	0.05	mg/L	<0.05	0.5 mg/L	88.0	64	98
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2012277)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	82.0	62	107
EP068A: Organochlorine Pesticides (OC) (QCLot: 2012275)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	86.7	65	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	83.5	58	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	92.9	69	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	89.8	70	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	92.0	69	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	84.9	65	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	82.2	66	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	105	67	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	95.9	64	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	102	67	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	90.7	63	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	87.1	65	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	85.0	66	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	96.9	65	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	89.7	67	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	103	72	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	78.4	67	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	92.7	65	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	104	65	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	78.1	64	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	103	61	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2012275)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	94.1	66	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	95.8	64	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	26.4	20	48
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	101	70	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	87.3	71	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	85.3	77	119

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2012275) - continued								
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	88.9	70	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	106	68	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	83.5	69	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	102	75	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	85.2	67	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	83.4	69	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	98.0	72	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	98.8	68	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	106	64	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	102	68	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	101	74	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	104	66	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	101	52	128
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2015008)								
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	102	73	119
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	108	76	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	112	69	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	110	74	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	111	73	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	111	74	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	108	72	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	109	71	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	109	65	123
EP074B: Oxygenated Compounds (QCLot: 2015008)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	96.4	61	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	98.6	74	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	91.1	66	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	98.2	65	137
EP074C: Sulfonated Compounds (QCLot: 2015008)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	93.9	73	127
EP074D: Fumigants (QCLot: 2015008)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	105	68	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	106	76	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	98.8	62	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	92.8	60	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	95.1	69	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 2015008)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	94.9	61	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 2015008) - continued								
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	101	67	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	109	69	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	102	56	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	102	61	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	102	69	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	101	70	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	87.8	70	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	104	74	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	104	74	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	101	77	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	101	67	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	99.2	73	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	97.1	62	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	97.9	73	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	103	76	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	99.0	73	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	105	72	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	96.6	71	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	108	72	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	95.6	66	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	93.1	60	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	91.2	71	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	95.5	70	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	103	74	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	101	72	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	88.5	66	136
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	117	58	130
EP074F: Halogenated Aromatic Compounds (QCLot: 2015008)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	107	79	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	106	76	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	112	73	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	108	73	119
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	108	75	117
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	108	74	118
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	104	75	117
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	111	61	125
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	112	67	123
EP074G: Trihalomethanes (QCLot: 2015008)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	103	72	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074G: Trihalomethanes (QCLot: 2015008) - continued								
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	92.0	64	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	91.7	65	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	90.8	74	126
EP074H: Naphthalene (QCLot: 2015008)								
EP074: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	103	72	122
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2012276)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	68.5	50	94
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	83.2	64	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	85.3	62	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	84.0	64	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	80.1	63	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	96.7	64	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	96.5	64	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	98.6	63	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	99.4	64	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	86.7	63	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	88.9	62	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	86.2	63	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	87.4	63	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	87.3	60	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	90.3	61	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	91.8	59	118
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2012274)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	90.8	76	116
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	102	83	109
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	102	75	113
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2015007)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	91.2	75	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2012274)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	2500 µg/L	89.8	76	114
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	3500 µg/L	105	81	111
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1500 µg/L	81.1	77	119
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2015007)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	92.7	75	127
EP080: BTEXN (QCLot: 2015007)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	93.2	70	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	93.2	69	123

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP080: BTEXN (QCLot: 2015007) - continued								
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	94.9	70	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	94.0	69	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	98.4	72	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	99.7	70	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2013169)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.5 µg/L	82.0	70	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.5 µg/L	97.6	70	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.5 µg/L	96.2	70	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.5 µg/L	97.2	70	130
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.5 µg/L	88.8	70	130
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	90.6	70	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2013169)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	2.5 µg/L	85.5	70	130
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	100	70	130
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	114	70	130
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	76.8	70	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	90.2	70	130
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	99.2	70	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	117	70	130
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	101	70	130
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	120	70	130
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	106	70	130
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	111	70	150
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2013169)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	84.8	70	130
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	99.0	70	150
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	97.9	70	150
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	92.4	70	150
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	105	70	150
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	92.0	70	130
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	113	70	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2013169)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.5 µg/L	111	70	130
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.5 µg/L	115	70	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2013169) - continued								
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.5 µg/L	112	70	130
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.5 µg/L	119	70	130

Matrix Spike (MS) Report

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

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 2012469)							
ES1832164-001	SRT-BH419	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70	130
ED045G: Chloride by Discrete Analyser (QCLot: 2012470)							
ES1832164-001	SRT-BH419	ED045G: Chloride	16887-00-6	250 mg/L	116	70	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 2013154)							
ES1832164-002	SRT-BH426	EG020A-F: Arsenic	7440-38-2	1 mg/L	100	70	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	101	70	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	103	70	130
		EG020A-F: Copper	7440-50-8	1 mg/L	99.2	70	130
		EG020A-F: Lead	7439-92-1	1 mg/L	98.4	70	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	99.2	70	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	105	70	130
EG035F: Dissolved Mercury by FIMS (QCLot: 2013156)							
ES1832164-001	SRT-BH419	EG035F: Mercury	7439-97-6	0.01 mg/L	87.8	70	130
EK040P: Fluoride by PC Titrator (QCLot: 2012453)							
ES1831759-002	Anonymous	EK040P: Fluoride	16984-48-8	5 mg/L	113	70	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 2012511)							
ES1832164-001	SRT-BH419	EK055G: Ammonia as N	7664-41-7	1 mg/L	119	70	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 2012510)							
ES1832164-001	SRT-BH419	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	# Not Determined	70	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2012514)							
ES1832148-008	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	106	70	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2012515)							
ES1832148-007	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	117	70	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 2010320)							
ES1832219-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	97.4	70	130
EP035G: Total Phenol by Discrete Analyser (QCLot: 2019446)							
ES1832164-001	SRT-BH419	EP035G: Phenols (Total)	----	0.42 mg/L	78.6	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2012277)							
ES1832164-002	SRT-BH426	EP066: Total Polychlorinated biphenyls	----	10 µg/L	81.0	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2012275)							
ES1832164-002	SRT-BH426	EP068: gamma-BHC	58-89-9	5 µg/L	82.0	70	130
		EP068: Heptachlor	76-44-8	5 µg/L	73.6	70	130
		EP068: Aldrin	309-00-2	5 µg/L	73.8	70	130
		EP068: Dieldrin	60-57-1	5 µg/L	73.5	70	130
		EP068: Endrin	72-20-8	20 µg/L	93.8	70	130
		EP068: 4.4`-DDT	50-29-3	20 µg/L	94.9	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2012275)							
ES1832164-002	SRT-BH426	EP068: Diazinon	333-41-5	5 µg/L	94.1	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	5 µg/L	91.0	70	130
		EP068: Pirimphos-ethyl	23505-41-1	5 µg/L	73.4	70	130
		EP068: Bromophos-ethyl	4824-78-6	5 µg/L	80.2	70	130
		EP068: Prothiofos	34643-46-4	5 µg/L	71.8	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 2015008)							
ES1832157-002	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	104	70	130
		EP074: Trichloroethene	79-01-6	25 µg/L	94.0	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 2015008)							
ES1832157-002	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	97.7	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2012276)							
ES1832164-002	SRT-BH426	EP075(SIM): Acenaphthene	83-32-9	20 µg/L	88.7	70	130
		EP075(SIM): Pyrene	129-00-0	20 µg/L	88.8	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2012274)							
ES1832164-002	SRT-BH426	EP071: C10 - C14 Fraction	----	200 µg/L	128	74	150
		EP071: C15 - C28 Fraction	----	300 µg/L	91.2	77	153
		EP071: C29 - C36 Fraction	----	200 µg/L	93.1	67	153
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2015007)							
ES1832157-002	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	95.6	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2012274)							
ES1832164-002	SRT-BH426	EP071: >C10 - C16 Fraction	----	250 µg/L	77.5	74	150
		EP071: >C16 - C34 Fraction	----	350 µg/L	77.6	77	153

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2012274) - continued							
ES1832164-002	SRT-BH426	EP071: >C34 - C40 Fraction	----	150 µg/L	110	67	153
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2015007)							
ES1832157-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	95.9	70	130
EP080: BTEXN (QCLot: 2015007)							
ES1832157-002	Anonymous	EP080: Benzene	71-43-2	25 µg/L	89.4	70	130
		EP080: Toluene	108-88-3	25 µg/L	95.4	70	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	99.4	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	97.6	70	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	103	70	130
		EP080: Naphthalene	91-20-3	25 µg/L	93.4	70	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2013169)							
EP1812667-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.5 µg/L	81.2	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.5 µg/L	87.2	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.5 µg/L	92.8	50	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.5 µg/L	97.4	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	97.0	50	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.5 µg/L	81.2	50	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2013169)							
EP1812667-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	88.0	50	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	94.4	50	130
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	103	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	77.6	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	89.2	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	99.8	50	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	110	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	93.0	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	107	50	130
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	103	50	130
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	108	50	150
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2013169)							
EP1812667-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	65.0	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	97.0	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	95.0	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	1.25 µg/L	114	50	150

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2013169) - continued							
EP1812667-001	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	105	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	83.6	50	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	116	50	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2013169)							
EP1812667-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.5 µg/L	100	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.5 µg/L	104	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.5 µg/L	113	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.5 µg/L	106	50	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES1832164**	Page	: 1 of 13
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 26-Oct-2018
Site	: 1791865 - SM TSE	Issue Date	: 06-Nov-2018
Sampler	: ----	No. of samples received	: 7
Order number	: .	No. of samples analysed	: 7

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

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

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

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

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	ES1832164--001	SRT-BH419	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Ar	ES1832164--001	SRT-BH419	**Nitrite + Nitrate as N**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Analysis Holding Time Compliance

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

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

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

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

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**----**	----	----	**31-Oct-2018**	11-Nov-2018	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**----**	----	----	**31-Oct-2018**	25-Nov-2018	✓
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**----**	----	----	**31-Oct-2018**	25-Nov-2018	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**----**	----	----	**01-Nov-2018**	25-Nov-2018	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**----**	----	----	**01-Nov-2018**	26-Apr-2019	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**----**	----	----	**01-Nov-2018**	25-Nov-2018	✓
EK040P: Fluoride by PC Titrator							
Clear Plastic Bottle - Natural (EK040P)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**----**	----	----	**31-Oct-2018**	25-Nov-2018	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**----**	----	----	**31-Oct-2018**	25-Nov-2018	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**----**	----	----	**31-Oct-2018**	25-Nov-2018	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**31-Oct-2018**	25-Nov-2018	✓	**31-Oct-2018**	25-Nov-2018	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**31-Oct-2018**	25-Nov-2018	✓	**31-Oct-2018**	25-Nov-2018	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**----**	----	----	**30-Oct-2018**	30-Oct-2018	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP035G: Total Phenol by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EP035G)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**05-Nov-2018**	25-Nov-2018	✓	**05-Nov-2018**	25-Nov-2018	✓
EP066: Polychlorinated Biphenyls (PCB)							
Amber Glass Bottle - Unpreserved (EP066)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**01-Nov-2018**	04-Nov-2018	✓	**05-Nov-2018**	11-Dec-2018	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**01-Nov-2018**	04-Nov-2018	✓	**05-Nov-2018**	11-Dec-2018	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**01-Nov-2018**	04-Nov-2018	✓	**05-Nov-2018**	11-Dec-2018	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**02-Nov-2018**	11-Nov-2018	✓	**02-Nov-2018**	11-Nov-2018	✓
EP074B: Oxygenated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**02-Nov-2018**	11-Nov-2018	✓	**02-Nov-2018**	11-Nov-2018	✓
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**02-Nov-2018**	11-Nov-2018	✓	**02-Nov-2018**	11-Nov-2018	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**02-Nov-2018**	11-Nov-2018	✓	**02-Nov-2018**	11-Nov-2018	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**02-Nov-2018**	11-Nov-2018	✓	**02-Nov-2018**	11-Nov-2018	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**02-Nov-2018**	11-Nov-2018	✓	**02-Nov-2018**	11-Nov-2018	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**02-Nov-2018**	11-Nov-2018	✓	**02-Nov-2018**	11-Nov-2018	✓
EP074H: Naphthalene							
Amber VOC Vial - Sulfuric Acid (EP074)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**02-Nov-2018**	11-Nov-2018	✓	**02-Nov-2018**	11-Nov-2018	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**01-Nov-2018**	04-Nov-2018	✓	**05-Nov-2018**	11-Dec-2018	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**01-Nov-2018**	04-Nov-2018	✓	**05-Nov-2018**	11-Dec-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**02-Nov-2018**	11-Nov-2018	✓	**02-Nov-2018**	11-Nov-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
SRT-TB200	**30-Oct-2018**	**02-Nov-2018**	13-Nov-2018	✓	**02-Nov-2018**	13-Nov-2018	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**01-Nov-2018**	04-Nov-2018	✓	**05-Nov-2018**	11-Dec-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**02-Nov-2018**	11-Nov-2018	✓	**02-Nov-2018**	11-Nov-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
SRT-TB200	**30-Oct-2018**	**02-Nov-2018**	13-Nov-2018	✓	**02-Nov-2018**	13-Nov-2018	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**02-Nov-2018**	11-Nov-2018	✓	**02-Nov-2018**	11-Nov-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
SRT-TB200, SRT-TS200	**30-Oct-2018**	**02-Nov-2018**	13-Nov-2018	✓	**02-Nov-2018**	13-Nov-2018	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**01-Nov-2018**	26-Apr-2019	✓	**01-Nov-2018**	26-Apr-2019	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**01-Nov-2018**	26-Apr-2019	✓	**01-Nov-2018**	26-Apr-2019	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**01-Nov-2018**	26-Apr-2019	✓	**01-Nov-2018**	26-Apr-2019	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**01-Nov-2018**	26-Apr-2019	✓	**01-Nov-2018**	26-Apr-2019	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
SRT-BH419, SRT-BH426, SRT-GMW1A, SRT-GMW2A, SRT-QCA200	**28-Oct-2018**	**01-Nov-2018**	26-Apr-2019	✓	**01-Nov-2018**	26-Apr-2019	✓

Quality Control Parameter Frequency Compliance

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

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Alkalinity by PC Titrator	ED037-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	8	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	9	**22.22**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol by Discrete Analyser	EP035G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by PC Titrator	ED037-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	9	**33.33**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Total Phenol by Discrete Analyser	EP035G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol by Discrete Analyser	EP035G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol by Discrete Analyser	EP035G	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		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	14	**7.14**	**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
Alkalinity by PC Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (2013) Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (2013) Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride.in the presence of ferric ions the librated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (2013) Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The 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 (2013) Schedule B(3)
Fluoride by PC Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3)
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM (2013) Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al (1976), Zhang et al (2006). This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM (2013) Schedule B(3)
Total Phenol by Discrete Analyser	EP035G	WATER	In house: Referenced to APHA 5530 B&D. Steam distillable Phenols are reacted with 4-aminoantipyrine. The resultant colour intensity is measured by Seal. This method is compliant with NEPM (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample 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 (2013) Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample 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 (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A 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 the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with methanol. 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. This method complies with the quality control definitions as stated in QSM 5.1. Data is reviewed in line with the DQOs as stated in QSM5.1

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM (2013) Schedule B(3)
Phenols After Microdistillation	EP035D	WATER	In house: Referenced to APHA 5530 A, B&D pH adjusted Steam distillable Phenolic compounds. The resultant colour intensity is measured by Discrete Analyser.
Preparation for PFAS in water.	EP231-PR	WATER	Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to anaylsis.
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

CHAIN OF CUSTODY & ANALYSIS REQUEST (COC10)

Page _1_ of __1__

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

Lab ID Number: *(please quote on correspondence)*

Site: 1791865 – SM TSE

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	W-26 (TRH / BTEX / PAHs / Dissolved Metals)	EP074 (VOCs)	NT-01 & 02A (Ca, Mg, Na, K, Cl, SO4, Alkalinity & Fluoride	NT11 (Total nitrogen and total phosphorus)	EK071G (Reactive Phosphorus)	EK055G (Ammonia as N)	EP231X (PFAS full suite)	W-13 (OCPs / OPPs / PCBs)	EP075 (Phenols - TOTAL)		W-18 (TRH (c6-C10) / BTEXN)
1	SRT-BH409	2/11/18 8:30am		X				X	X	X	X	X	X	X	X	X		
2	SRT-BH420	1/11/18 5:30pm		X				X	X	X	X	X	X	X	X	X		
3	SRT-TB200	31/10/18		X		1												X
4	SRT-TS200	29/10/18		X		1												X

Additional Report Formats
NEPM
✓ CSV
✓ ESDAT
DQO
GO, Guidelines --------
Others _____

Notes/Guidelines/LOR/ Special instructions
) dissolved metals were field filtered

Environmental Division
Sydney
Work Order Reference
ES1832698

Telephone : +61-2-8784 8555

Relinquished By: Thea McIntyre	Date/Time: 2/11/18 11:10	Received By: Sep-ALS Crows Nest	Date/Time: 02/11/1[illegible]
Relinquished By:	Date/Time:	Received By: JUSTIN ALS SMITHFIELD	Date/Time: 2/11/18 3.20pm
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: as per proposal

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES1832698**

Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: RBonetti@golder.com.au	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9478 3901	Facsimile	: +61-2-8784 8500
Project	: Sydney Metro	Page	: 1 of 3
Order number	:	Quote number	: ES2017GOLASS0019 (SY/698/17 C V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: 1791865 - SM TSE		
Sampler	:		

Dates

Date Samples Received	: 02-Nov-2018 11:20	Issue Date	: 02-Nov-2018
Client Requested Due Date	: 08-Nov-2018	Scheduled Reporting Date	: **08-Nov-2018**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 5.6'C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 4 / 4

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please 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 absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.

Sample Container(s)/Preservation Non-Compliances

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

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

Summary of Sample(s) and Requested Analysis

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

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EK055G Ammonia as N By Discrete Analyser	WATER - EK071G Reactive Phosphorus by Discrete analyser	WATER - EP035G Total Phenol by Discrete Analyser	WATER - NT-01 & 02A Ca, Mg, Na, K, Cl, SO4, Alkalinity & Fluoride	WATER - NT-11 Total Nitrogen and Total Phosphorus	WATER - W-13 OC/OP/PCB	WATER - W-26 TRH/BTEXN/PAH/8 Metals
ES1832698-001	02-Nov-2018 08:30	SRT-BH409	✓	✓	✓	✓	✓	✓	✓
ES1832698-002	02-Nov-2018 17:30	SRT-BH420	✓	✓	✓	✓	✓	✓	✓

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EP074 (water) Volatile Organic Compounds	WATER - EP080 BTEXN	WATER - EP231X PFAS - Full Suite (28 analytes)	WATER - W-18 TRH(C6 - C9)/BTEXN
ES1832698-001	02-Nov-2018 08:30	SRT-BH409	✓		✓	
ES1832698-002	02-Nov-2018 17:30	SRT-BH420	✓		✓	
ES1832698-003	31-Oct-2018 00:00	SRT-TB200				✓
ES1832698-004	29-Oct-2018 00:00	SRT-TS200		✓		

Proactive Holding Time Report

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

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	au_accountspayable@golder.com.au

BARRY HOUSTON

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

RITA BONETTI

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

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1832698**	Page	: 1 of 12
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 02-Nov-2018 11:20
Order number	:	Date Analysis Commenced	: 02-Nov-2018
C-O-C number	: ----	Issue Date	: 08-Nov-2018 16:59
Sampler	: ----		
Site	: 1791865 - SM TSE		
Quote number	: SY/698/17 C V4		
No. of samples received	: 4		
No. of samples analysed	: 4		

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

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini		Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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.

- EP231: PFAS results for sample #1 confirmed by re-extraction and re-analysis
- ED037-P : Alkalinity was determined on a filtered sample for sample 1.
- EP080: Sample TRIP SPIKE contains volatile compounds spiked into the sample containers prior to dispatch from the laboratory. BTEX compounds spiked at 20 ug/L.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-BH409	SRT-BH420	SRT-TB200	SRT-TS200	----
				Client sampling date / time	02-Nov-2018 08:30	02-Nov-2018 17:30	31-Oct-2018 00:00	29-Oct-2018 00:00	----
Compound	CAS Number	LOR	Unit		ES1832698-001	ES1832698-002	ES1832698-003	ES1832698-004	--------
					Result	Result	Result	Result	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**79**	**27**	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L		**79**	**27**	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**56**	**76**	----	----	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**26**	**40**	----	----	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**28**	**25**	----	----	----
Magnesium	7439-95-4	1	mg/L		**5**	**7**	----	----	----
Sodium	7440-23-5	1	mg/L		**45**	**36**	----	----	----
Potassium	7440-09-7	1	mg/L		**6**	**8**	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.001**	**0.003**	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.001**	**0.002**	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.008**	**0.016**	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	----	----	----
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L		**0.1**	<0.1	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.09**	<0.01	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**9.78**	**12.4**	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**1.8**	**2.3**	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**11.6**	**14.7**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-BH409	SRT-BH420	SRT-TB200	SRT-TS200	----
				Client sampling date / time	02-Nov-2018 08:30	02-Nov-2018 17:30	31-Oct-2018 00:00	29-Oct-2018 00:00	----
Compound	CAS Number	LOR	Unit		ES1832698-001	ES1832698-002	ES1832698-003	ES1832698-004	--------
					Result	Result	Result	Result	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.59**	**0.04**	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	----	----	----
EN055: Ionic Balance									
Total Anions	----	0.01	meq/L		**4.18**	----	----	----	----
Total Anions	----	0.01	meq/L		----	**3.25**	----	----	----
Total Cations	----	0.01	meq/L		**3.92**	**3.59**	----	----	----
Ionic Balance	----	0.01	%		**3.19**	----	----	----	----
Ionic Balance	----	0.01	%		----	**5.02**	----	----	----
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	0.05	mg/L		<0.05	<0.05	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
^ Total Polychlorinated biphenyls	----	1	µg/L		<1	<1	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L		<0.5	<0.5	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L		<0.5	<0.5	----	----	----
beta-BHC	319-85-7	0.5	µg/L		<0.5	<0.5	----	----	----
gamma-BHC	58-89-9	0.5	µg/L		<0.5	<0.5	----	----	----
delta-BHC	319-86-8	0.5	µg/L		<0.5	<0.5	----	----	----
Heptachlor	76-44-8	0.5	µg/L		<0.5	<0.5	----	----	----
Aldrin	309-00-2	0.5	µg/L		<0.5	<0.5	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L		<0.5	<0.5	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L		<0.5	<0.5	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L		<0.5	<0.5	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L		<0.5	<0.5	----	----	----
Dieldrin	60-57-1	0.5	µg/L		<0.5	<0.5	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L		<0.5	<0.5	----	----	----
Endrin	72-20-8	0.5	µg/L		<0.5	<0.5	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L		<0.5	<0.5	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L		<0.5	<0.5	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L		<0.5	<0.5	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L		<0.5	<0.5	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L		<2.0	<2.0	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L		<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-BH409	SRT-BH420	SRT-TB200	SRT-TS200	----
				Client sampling date / time	02-Nov-2018 08:30	02-Nov-2018 17:30	31-Oct-2018 00:00	29-Oct-2018 00:00	----
Compound	CAS Number	LOR	Unit		ES1832698-001	ES1832698-002	ES1832698-003	ES1832698-004	--------
					Result	Result	Result	Result	----
EP068A: Organochlorine Pesticides (OC) - Continued									
Methoxychlor	72-43-5	2.0	µg/L		<2.0	<2.0	----	----	----
^ Total Chlordane (sum)	----	0.5	µg/L		<0.5	<0.5	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L		<0.5	<0.5	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L		<0.5	<0.5	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L		<0.5	<0.5	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L		<0.5	<0.5	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L		<2.0	<2.0	----	----	----
Dimethoate	60-51-5	0.5	µg/L		<0.5	<0.5	----	----	----
Diazinon	333-41-5	0.5	µg/L		<0.5	<0.5	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L		<0.5	<0.5	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L		<2.0	<2.0	----	----	----
Malathion	121-75-5	0.5	µg/L		<0.5	<0.5	----	----	----
Fenthion	55-38-9	0.5	µg/L		<0.5	<0.5	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L		<0.5	<0.5	----	----	----
Parathion	56-38-2	2.0	µg/L		<2.0	<2.0	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L		<0.5	<0.5	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L		<0.5	<0.5	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L		<0.5	<0.5	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L		<0.5	<0.5	----	----	----
Prothiofos	34643-46-4	0.5	µg/L		<0.5	<0.5	----	----	----
Ethion	563-12-2	0.5	µg/L		<0.5	<0.5	----	----	----
Carbophenothion	786-19-6	0.5	µg/L		<0.5	<0.5	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L		<0.5	<0.5	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	5	µg/L		<5	<5	----	----	----
Isopropylbenzene	98-82-8	5	µg/L		<5	<5	----	----	----
n-Propylbenzene	103-65-1	5	µg/L		<5	<5	----	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L		<5	<5	----	----	----
sec-Butylbenzene	135-98-8	5	µg/L		<5	<5	----	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L		<5	<5	----	----	----
tert-Butylbenzene	98-06-6	5	µg/L		<5	<5	----	----	----
p-Isopropyltoluene	99-87-6	5	µg/L		<5	<5	----	----	----
n-Butylbenzene	104-51-8	5	µg/L		<5	<5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-BH409	SRT-BH420	SRT-TB200	SRT-TS200	----
				Client sampling date / time	02-Nov-2018 08:30	02-Nov-2018 17:30	31-Oct-2018 00:00	29-Oct-2018 00:00	----
Compound	CAS Number	LOR	Unit		ES1832698-001	ES1832698-002	ES1832698-003	ES1832698-004	--------
					Result	Result	Result	Result	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued									
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	50	µg/L		<50	<50	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L		<50	<50	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L		<50	<50	----	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L		<50	<50	----	----	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	5	µg/L		<5	<5	----	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	5	µg/L		<5	<5	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L		<5	<5	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L		<5	<5	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L		<5	<5	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L		<5	<5	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	50	µg/L		<50	<50	----	----	----
Chloromethane	74-87-3	50	µg/L		<50	<50	----	----	----
Vinyl chloride	75-01-4	50	µg/L		<50	<50	----	----	----
Bromomethane	74-83-9	50	µg/L		<50	<50	----	----	----
Chloroethane	75-00-3	50	µg/L		<50	<50	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L		<50	<50	----	----	----
1.1-Dichloroethene	75-35-4	5	µg/L		<5	<5	----	----	----
Iodomethane	74-88-4	5	µg/L		<5	<5	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L		<5	<5	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L		<5	<5	----	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L		<5	<5	----	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L		<5	<5	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L		<5	<5	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L		<5	<5	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L		<5	<5	----	----	----
Trichloroethene	79-01-6	5	µg/L		<5	<5	----	----	----
Dibromomethane	74-95-3	5	µg/L		<5	<5	----	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	<5	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L		<5	<5	----	----	----
Tetrachloroethene	127-18-4	5	µg/L		<5	<5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-BH409	SRT-BH420	SRT-TB200	SRT-TS200	----
				Client sampling date / time	02-Nov-2018 08:30	02-Nov-2018 17:30	31-Oct-2018 00:00	29-Oct-2018 00:00	----
Compound	CAS Number	LOR	Unit		ES1832698-001	ES1832698-002	ES1832698-003	ES1832698-004	--------
					Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	<5	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L		<5	<5	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L		<5	<5	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	<5	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	----	----	----
Pentachloroethane	76-01-7	5	µg/L		<5	<5	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	----	----	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	----	----	----
Bromobenzene	108-86-1	5	µg/L		<5	<5	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	----	----	----
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	----	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	----	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	----	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	----	----	----
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	----	----	----
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	----	----	----
Bromoform	75-25-2	5	µg/L		<5	<5	----	----	----
EP074H: Naphthalene									
Naphthalene	91-20-3	5	µg/L		<5	<5	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-BH409	SRT-BH420	SRT-TB200	SRT-TS200	----
				Client sampling date / time	02-Nov-2018 08:30	02-Nov-2018 17:30	31-Oct-2018 00:00	29-Oct-2018 00:00	----
Compound	CAS Number	LOR	Unit		ES1832698-001	ES1832698-002	ES1832698-003	ES1832698-004	--------
					Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L		<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	**15**	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	**14**	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	**14**	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	**14**	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	**16**	----
^ Total Xylenes	----	2	µg/L		<2	<2	<2	**30**	----
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	**73**	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	**18**	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-BH409	SRT-BH420	SRT-TB200	SRT-TS200	----
				Client sampling date / time	02-Nov-2018 08:30	02-Nov-2018 17:30	31-Oct-2018 00:00	29-Oct-2018 00:00	----
Compound	CAS Number	LOR	Unit		ES1832698-001	ES1832698-002	ES1832698-003	ES1832698-004	--------
					Result	Result	Result	Result	----
EP080: BTEXN - Continued									
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**0.02**	<0.02	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-BH409	SRT-BH420	SRT-TB200	SRT-TS200	----
				Client sampling date / time	02-Nov-2018 08:30	02-Nov-2018 17:30	31-Oct-2018 00:00	29-Oct-2018 00:00	----
Compound	CAS Number	LOR	Unit		ES1832698-001	ES1832698-002	ES1832698-003	ES1832698-004	--------
					Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.02**	<0.01	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.02**	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.02**	<0.01	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		**101**	**119**	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		**73.6**	**85.4**	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		**76.6**	**83.7**	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**99.8**	**101**	----	----	----
Toluene-D8	2037-26-5	5	%		**102**	**97.4**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-BH409	SRT-BH420	SRT-TB200	SRT-TS200	----
				Client sampling date / time	02-Nov-2018 08:30	02-Nov-2018 17:30	31-Oct-2018 00:00	29-Oct-2018 00:00	----
Compound	CAS Number	LOR	Unit		ES1832698-001	ES1832698-002	ES1832698-003	ES1832698-004	--------
					Result	Result	Result	Result	----
EP074S: VOC Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	5	%		99.7	94.6	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		18.1	20.6	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		40.0	46.8	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		57.2	65.3	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		71.1	69.3	----	----	----
Anthracene-d10	1719-06-8	1.0	%		81.1	96.5	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		69.6	77.8	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		102	103	105	105	----
Toluene-D8	2037-26-5	2	%		104	99.9	106	108	----
4-Bromofluorobenzene	460-00-4	2	%		105	100	108	108	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		102	104	----	----	----
13C8-PFOA	----	0.02	%		102	98.4	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	29	129
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES1832698**	Page	: 1 of 17
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 02-Nov-2018
Order number	:	Date Analysis Commenced	: 02-Nov-2018
C-O-C number	: ----	Issue Date	: 08-Nov-2018
Sampler	: ----		
Site	: 1791865 - SM TSE		
Quote number	: SY/698/17 C V4		
No. of samples received	: 4		
No. of samples analysed	: 4		

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

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

This Quality Control Report contains the following information:

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

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*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini		Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
ED037P: Alkalinity by PC Titrator (QC Lot: 2017490)									
ES1832505-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	<1	<1	0.00	No Limit
ES1832698-001	SRT-BH409	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	79	74	7.23	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	79	74	7.23	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 2017985)									
ES1832614-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	36	37	0.00	0% - 20%
ES1832714-002	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	<1	0.00	No Limit
ED045G: Chloride by Discrete Analyser (QC Lot: 2017988)									
ES1832614-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	473	475	0.309	0% - 20%
ES1832714-002	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	13	12	0.00	0% - 50%
ED093F: Dissolved Major Cations (QC Lot: 2019073)									
ES1832660-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	98	97	0.00	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	55	56	0.00	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	204	206	0.698	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	3	3	0.00	No Limit
ES1832734-002	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	538	548	1.97	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	253	262	3.37	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	1600	1610	0.911	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	122	125	2.56	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2019074)									

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2019074) - continued									
ES1832660-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
ES1832734-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	2.46	2.42	1.68	0% - 20%
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.004	0.004	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	0.705	0.695	1.42	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.587	0.606	3.16	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	1120	1080	3.17	0% - 20%
EG035F: Dissolved Mercury by FIMS (QC Lot: 2019075)									
ES1832698-002	SRT-BH420	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EK040P: Fluoride by PC Titrator (QC Lot: 2017493)									
ES1832698-001	SRT-BH409	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.1	<0.1	0.00	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 2018401)									
ES1832767-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.00	No Limit
ES1832517-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.01	<0.01	0.00	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 2018400)									
ES1832589-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.05	0.05	0.00	No Limit
ES1832517-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.28	0.30	4.58	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 2018405)									
ES1832589-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	5.9	5.9	0.00	0% - 20%
ES1832517-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.4	0.4	0.00	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 2018404)									
ES1832589-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.06	0.08	22.8	No Limit
ES1832517-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 2017986)									
ES1832605-003	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.05	0.05	0.00	No Limit
EP035G: Total Phenol by Discrete Analyser (QC Lot: 2023357)									
ES1832698-001	SRT-BH409	EP035G: Phenols (Total)	----	0.05	mg/L	<0.05	<0.05	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2020089)									
ES1832698-001	SRT-BH409	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2020089) - continued									
ES1832698-001	SRT-BH409	EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.00	No Limit
EP074B: Oxygenated Compounds (QC Lot: 2020089)									
ES1832698-001	SRT-BH409	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.00	No Limit
EP074C: Sulfonated Compounds (QC Lot: 2020089)									
ES1832698-001	SRT-BH409	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.00	No Limit
EP074D: Fumigants (QC Lot: 2020089)									
ES1832698-001	SRT-BH409	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2020089)									
ES1832698-001	SRT-BH409	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.00	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2020089) - continued									
ES1832698-001	SRT-BH409	EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.00	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.00	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.00	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 2020089)									
ES1832698-001	SRT-BH409	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 2020089)									
ES1832698-001	SRT-BH409	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.00	No Limit
EP074H: Naphthalene (QC Lot: 2020089)									
ES1832698-001	SRT-BH409	EP074: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2020088)									
ES1832912-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
ES1832698-001	SRT-BH409	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2020088)									
ES1832912-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
ES1832698-001	SRT-BH409	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 2020088)									
ES1832912-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEXN (QC Lot: 2020088) - continued									
ES1832912-001	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
ES1832698-001	SRT-BH409	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2017854)									
ES1832698-002	SRT-BH420	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.02	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
ES1832634-023	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.24	0.23	6.32	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.10	0.10	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2017854)									
ES1832698-002	SRT-BH420	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
ES1832634-023	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	0.05	0.05	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	0.03	0.03	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2017854) - continued									
ES1832634-023	Anonymous	EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2017854)									
ES1832698-002	SRT-BH420	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
ES1832634-023	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2017854)									
ES1832698-002	SRT-BH420	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2017854) - continued									
ES1832634-023	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 2017854)									
ES1832698-002	SRT-BH420	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	0.02	66.7	No Limit
ES1832634-023	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.42	0.41	2.41	0% - 20%

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

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

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
ED037P: Alkalinity by PC Titrator (QCLot: 2017490)								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	99.6	81	111
				----	50 mg/L	113	70	130
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 2017985)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	102	82	122
ED045G: Chloride by Discrete Analyser (QCLot: 2017988)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	99.4	81	127
				<1	1000 mg/L	103	81	127
ED093F: Dissolved Major Cations (QCLot: 2019073)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	50 mg/L	93.0	80	114
ED093F: Magnesium	7439-95-4	1	mg/L	<1	50 mg/L	95.8	90	116
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	94.6	82	120
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	95.2	85	113
EG020F: Dissolved Metals by ICP-MS (QCLot: 2019074)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	93.2	85	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	85.8	84	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	88.6	85	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	88.4	81	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	88.1	83	111
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	92.2	82	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	88.2	81	117
EG035F: Dissolved Mercury by FIMS (QCLot: 2019075)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	89.1	83	105
EK040P: Fluoride by PC Titrator (QCLot: 2017493)								
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	104	82	116
EK055G: Ammonia as N by Discrete Analyser (QCLot: 2018401)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	101	90	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 2018400)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	102	91	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2018405)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	86.6	69	101
				<0.1	1 mg/L	92.2	70	118
				<0.1	5 mg/L	94.2	74	118
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2018404)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2018404) - continued								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	87.4	71	101
				<0.01	0.442 mg/L	89.3	72	108
				<0.01	1 mg/L	94.5	78	118
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 2017986)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	103	85	117
EP035G: Total Phenol by Discrete Analyser (QCLot: 2023357)								
EP035G: Phenols (Total)	----	0.05	mg/L	<0.05	0.5 mg/L	85.5	64	98
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2018135)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	79.0	62	107
EP068A: Organochlorine Pesticides (OC) (QCLot: 2018131)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	90.9	65	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	89.4	58	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	90.1	69	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	102	70	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	102	69	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	98.2	65	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	97.8	66	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	92.8	67	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	90.8	64	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	96.9	67	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	87.7	63	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	98.0	65	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	94.9	66	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	101	65	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	98.1	67	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	98.5	72	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	86.4	67	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	94.0	65	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	88.9	65	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	90.7	64	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	93.0	61	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2018131)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	87.0	66	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	81.0	64	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	24.5	20	48
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	80.9	70	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	99.5	71	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	100	77	119

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2018131) - continued								
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	92.4	70	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	96.2	68	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	93.5	69	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	95.8	75	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	89.8	67	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	91.5	69	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	96.5	72	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	90.8	68	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	92.6	64	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	94.0	68	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	99.0	74	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	105	66	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	97.9	52	128
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2020089)								
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	102	73	119
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	104	76	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	101	69	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	104	74	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	103	73	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	104	74	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	104	72	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	103	71	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	101	65	123
EP074B: Oxygenated Compounds (QCLot: 2020089)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	104	61	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	93.6	74	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	101	66	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	96.8	65	137
EP074C: Sulfonated Compounds (QCLot: 2020089)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	95.1	73	127
EP074D: Fumigants (QCLot: 2020089)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	103	68	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	104	76	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	101	62	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	102	60	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	106	69	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 2020089)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	92.5	61	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 2020089) - continued								
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	97.8	67	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	94.5	69	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	96.8	56	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	95.1	61	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	99.1	69	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	101	70	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	83.7	70	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	100	74	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	101	74	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	102	77	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	101	67	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	101	73	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	98.2	62	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	104	73	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	103	76	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	103	73	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	104	72	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	110	71	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	100	72	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	102	66	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	100	60	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	108	71	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	104	70	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	109	74	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	99.5	72	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	100	66	136
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	104	58	130
EP074F: Halogenated Aromatic Compounds (QCLot: 2020089)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	104	79	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	102	76	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	105	73	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	103	73	119
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	105	75	117
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	103	74	118
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	104	75	117
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	103	61	125
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	105	67	123
EP074G: Trihalomethanes (QCLot: 2020089)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	103	72	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074G: Trihalomethanes (QCLot: 2020089) - continued								
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	102	64	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	99.3	65	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	97.6	74	126
EP074H: Naphthalene (QCLot: 2020089)								
EP074: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	106	72	122
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2018134)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	73.4	50	94
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	78.6	64	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	82.2	62	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	82.1	64	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	96.7	63	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	92.6	64	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	89.0	64	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	89.1	63	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	85.6	64	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	101	63	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	93.6	62	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	97.2	63	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	81.6	63	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	85.9	60	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	91.6	61	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	95.4	59	118
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2018133)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	84.4	76	116
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	90.4	83	109
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	83.8	75	113
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2020088)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	94.4	75	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2018133)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	2500 µg/L	92.8	76	114
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	3500 µg/L	86.4	81	111
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1500 µg/L	99.9	77	119
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2020088)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	95.0	75	127
EP080: BTEXN (QCLot: 2020088)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	89.9	70	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	97.2	69	123

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP080: BTEXN (QCLot: 2020088) - continued								
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	96.7	70	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	98.9	69	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	100	72	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	98.2	70	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2017854)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.5 µg/L	77.4	70	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.5 µg/L	83.2	70	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.5 µg/L	111	70	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.5 µg/L	93.6	70	130
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.5 µg/L	86.8	70	130
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	75.4	70	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2017854)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	2.5 µg/L	89.6	70	130
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	97.4	70	130
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	108	70	130
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	83.0	70	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	83.8	70	130
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	98.0	70	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	110	70	130
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	90.2	70	130
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	116	70	130
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	111	70	130
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	110	70	150
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2017854)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	71.4	70	130
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	95.4	70	150
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	97.7	70	150
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	101	70	150
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	110	70	150
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	75.2	70	130
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	91.0	70	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2017854)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.5 µg/L	97.2	70	130
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.5 µg/L	87.2	70	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2017854) - continued								
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.5 µg/L	104	70	130
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.5 µg/L	107	70	130

Matrix Spike (MS) Report

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

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 2017985)							
ES1832614-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	83.2	70	130
ED045G: Chloride by Discrete Analyser (QCLot: 2017988)							
ES1832614-001	Anonymous	ED045G: Chloride	16887-00-6	250 mg/L	89.8	70	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 2019074)							
ES1832660-002	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	94.7	70	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	88.8	70	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	97.6	70	130
		EG020A-F: Copper	7440-50-8	1 mg/L	93.5	70	130
		EG020A-F: Lead	7439-92-1	1 mg/L	103	70	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	93.5	70	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	92.6	70	130
EG035F: Dissolved Mercury by FIMS (QCLot: 2019075)							
ES1832698-001	SRT-BH409	EG035F: Mercury	7439-97-6	0.01 mg/L	75.3	70	130
EK040P: Fluoride by PC Titrator (QCLot: 2017493)							
ES1832698-001	SRT-BH409	EK040P: Fluoride	16984-48-8	5 mg/L	91.2	70	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 2018401)							
ES1832517-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	120	70	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 2018400)							
ES1832517-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	107	70	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2018405)							
ES1832517-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	87.7	70	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2018404)							
ES1832517-002	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	94.0	70	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 2017986)							
ES1832605-003	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	99.2	70	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP035G: Total Phenol by Discrete Analyser (QCLot: 2023357)							
ES1832698-001	SRT-BH409	EP035G: Phenols (Total)	----	0.42 mg/L	83.4	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 2020089)							
ES1832698-001	SRT-BH409	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	88.0	70	130
		EP074: Trichloroethene	79-01-6	25 µg/L	96.2	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 2020089)							
ES1832698-001	SRT-BH409	EP074: Chlorobenzene	108-90-7	25 µg/L	83.5	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2020088)							
ES1832698-001	SRT-BH409	EP080: C6 - C9 Fraction	----	325 µg/L	92.6	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2020088)							
ES1832698-001	SRT-BH409	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	91.5	70	130
EP080: BTEXN (QCLot: 2020088)							
ES1832698-001	SRT-BH409	EP080: Benzene	71-43-2	25 µg/L	81.8	70	130
		EP080: Toluene	108-88-3	25 µg/L	84.6	70	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	88.4	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	88.2	70	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	89.8	70	130
		EP080: Naphthalene	91-20-3	25 µg/L	87.7	70	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2017854)							
ES1832698-002	SRT-BH420	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.5 µg/L	79.4	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.5 µg/L	78.6	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.5 µg/L	111	50	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.5 µg/L	96.8	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	92.4	50	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.5 µg/L	79.2	50	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2017854)							
ES1832698-002	SRT-BH420	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	93.0	50	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	96.2	50	130
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	88.6	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	78.0	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	83.4	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	93.2	50	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	101	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	94.6	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	111	50	130
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	101	50	130
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	100	50	150

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2017854)							
ES1832698-002	SRT-BH420	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	61.4	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	86.6	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	97.0	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	1.25 µg/L	95.8	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	104	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	71.0	50	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	114	50	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2017854)							
ES1832698-002	SRT-BH420	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.5 µg/L	97.8	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.5 µg/L	81.6	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.5 µg/L	98.8	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.5 µg/L	93.2	50	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES1832698**	Page	: 1 of 11
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 02-Nov-2018
Site	: 1791865 - SM TSE	Issue Date	: 08-Nov-2018
Sampler	: ----	No. of samples received	: 4
Order number	:	No. of samples analysed	: 4

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

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

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	10	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	6	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	4	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	18	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	10	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	6	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	4	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	18	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

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

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

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

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

Matrix: **WATER**

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

Method / *Container / Client Sample ID(s)*		*Sample Date*	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
ED037P: Alkalinity by PC Titrator								
Clear Plastic Bottle - Natural (ED037-P)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**----**	----	----	**02-Nov-2018**	16-Nov-2018	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Clear Plastic Bottle - Natural (ED041G)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**----**	----	----	**03-Nov-2018**	30-Nov-2018	✓
ED045G: Chloride by Discrete Analyser								
Clear Plastic Bottle - Natural (ED045G)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**----**	----	----	**03-Nov-2018**	30-Nov-2018	✓
ED093F: Dissolved Major Cations								
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**----**	----	----	**05-Nov-2018**	30-Nov-2018	✓
EG020F: Dissolved Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**----**	----	----	**05-Nov-2018**	01-May-2019	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035F: Dissolved Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**----**	----	----	**05-Nov-2018**	30-Nov-2018	✓
EK040P: Fluoride by PC Titrator								
Clear Plastic Bottle - Natural (EK040P)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**----**	----	----	**02-Nov-2018**	30-Nov-2018	✓
EK055G: Ammonia as N by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK055G)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**----**	----	----	**05-Nov-2018**	30-Nov-2018	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK059G)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**----**	----	----	**05-Nov-2018**	30-Nov-2018	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK061G)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**05-Nov-2018**	30-Nov-2018	✓	**05-Nov-2018**	30-Nov-2018	✓
EK067G: Total Phosphorus as P by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK067G)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**05-Nov-2018**	30-Nov-2018	✓	**05-Nov-2018**	30-Nov-2018	✓
EK071G: Reactive Phosphorus as P by discrete analyser								
Clear Plastic Bottle - Natural (EK071G)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**----**	----	----	**03-Nov-2018**	04-Nov-2018	✓
EP035G: Total Phenol by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EP035G)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**07-Nov-2018**	30-Nov-2018	✓	**07-Nov-2018**	30-Nov-2018	✓
EP066: Polychlorinated Biphenyls (PCB)								
Amber Glass Bottle - Unpreserved (EP066)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**05-Nov-2018**	09-Nov-2018	✓	**06-Nov-2018**	15-Dec-2018	✓
EP068A: Organochlorine Pesticides (OC)								
Amber Glass Bottle - Unpreserved (EP068)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**05-Nov-2018**	09-Nov-2018	✓	**06-Nov-2018**	15-Dec-2018	✓
EP068B: Organophosphorus Pesticides (OP)								
Amber Glass Bottle - Unpreserved (EP068)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**05-Nov-2018**	09-Nov-2018	✓	**06-Nov-2018**	15-Dec-2018	✓
EP074A: Monocyclic Aromatic Hydrocarbons								
Amber VOC Vial - Sulfuric Acid (EP074)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**07-Nov-2018**	16-Nov-2018	✓	**07-Nov-2018**	16-Nov-2018	✓
EP074B: Oxygenated Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**07-Nov-2018**	16-Nov-2018	✓	**07-Nov-2018**	16-Nov-2018	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SRT-BH409, SRT-BH420	**02-Nov-2018**	**07-Nov-2018**	16-Nov-2018	✓	**07-Nov-2018**	16-Nov-2018	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074)							
SRT-BH409, SRT-BH420	**02-Nov-2018**	**07-Nov-2018**	16-Nov-2018	✓	**07-Nov-2018**	16-Nov-2018	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SRT-BH409, SRT-BH420	**02-Nov-2018**	**07-Nov-2018**	16-Nov-2018	✓	**07-Nov-2018**	16-Nov-2018	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
SRT-BH409, SRT-BH420	**02-Nov-2018**	**07-Nov-2018**	16-Nov-2018	✓	**07-Nov-2018**	16-Nov-2018	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074)							
SRT-BH409, SRT-BH420	**02-Nov-2018**	**07-Nov-2018**	16-Nov-2018	✓	**07-Nov-2018**	16-Nov-2018	✓
EP074H: Naphthalene							
Amber VOC Vial - Sulfuric Acid (EP074)							
SRT-BH409, SRT-BH420	**02-Nov-2018**	**07-Nov-2018**	16-Nov-2018	✓	**07-Nov-2018**	16-Nov-2018	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
SRT-BH409, SRT-BH420	**02-Nov-2018**	**05-Nov-2018**	09-Nov-2018	✓	**05-Nov-2018**	15-Dec-2018	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
SRT-BH409, SRT-BH420	**02-Nov-2018**	**05-Nov-2018**	09-Nov-2018	✓	**06-Nov-2018**	15-Dec-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
SRT-BH409, SRT-BH420	**02-Nov-2018**	**07-Nov-2018**	16-Nov-2018	✓	**07-Nov-2018**	16-Nov-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
SRT-TB200	**31-Oct-2018**	**07-Nov-2018**	14-Nov-2018	✓	**07-Nov-2018**	14-Nov-2018	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
SRT-BH409, SRT-BH420	**02-Nov-2018**	**05-Nov-2018**	09-Nov-2018	✓	**06-Nov-2018**	15-Dec-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
SRT-BH409, SRT-BH420	**02-Nov-2018**	**07-Nov-2018**	16-Nov-2018	✓	**07-Nov-2018**	16-Nov-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
SRT-TB200	**31-Oct-2018**	**07-Nov-2018**	14-Nov-2018	✓	**07-Nov-2018**	14-Nov-2018	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
SRT-BH409, SRT-BH420	**02-Nov-2018**	**07-Nov-2018**	16-Nov-2018	✓	**07-Nov-2018**	16-Nov-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
SRT-TS200	**29-Oct-2018**	**07-Nov-2018**	12-Nov-2018	✓	**07-Nov-2018**	12-Nov-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
SRT-TB200	**31-Oct-2018**	**07-Nov-2018**	14-Nov-2018	✓	**07-Nov-2018**	14-Nov-2018	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**03-Nov-2018**	01-May-2019	✓	**05-Nov-2018**	01-May-2019	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**03-Nov-2018**	01-May-2019	✓	**05-Nov-2018**	01-May-2019	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**03-Nov-2018**	01-May-2019	✓	**05-Nov-2018**	01-May-2019	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**03-Nov-2018**	01-May-2019	✓	**05-Nov-2018**	01-May-2019	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
SRT-BH409,	SRT-BH420	**02-Nov-2018**	**03-Nov-2018**	01-May-2019	✓	**05-Nov-2018**	01-May-2019	✓

Quality Control Parameter Frequency Compliance

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

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Alkalinity by PC Titrator	ED037-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	8	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	10	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	6	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	4	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol by Discrete Analyser	EP035G	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	18	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by PC Titrator	ED037-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	19	**15.79**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Total Phenol by Discrete Analyser	EP035G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol by Discrete Analyser	EP035G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	10	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	6	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	4	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol by Discrete Analyser	EP035G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	18	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Alkalinity by PC Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (2013) Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (2013) Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride.in the presence of ferric ions the librated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (2013) Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The 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 (2013) Schedule B(3)
Fluoride by PC Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3)
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM (2013) Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al (1976), Zhang et al (2006). This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM (2013) Schedule B(3)
Total Phenol by Discrete Analyser	EP035G	WATER	In house: Referenced to APHA 5530 B&D. Steam distillable Phenols are reacted with 4-aminoantipyrine. The resultant colour intensity is measured by Seal. This method is compliant with NEPM (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample 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 (2013) Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample 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 (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A 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 the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with methanol. 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. This method complies with the quality control definitions as stated in QSM 5.1. Data is reviewed in line with the DQOs as stated in QSM5.1

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM (2013) Schedule B(3)
Phenols After Microdistillation	EP035D	WATER	In house: Referenced to APHA 5530 A, B&D pH adjusted Steam distillable Phenolic compounds. The resultant colour intensity is measured by Discrete Analyser.
Preparation for PFAS in water.	EP231-PR	WATER	Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to anaylsis.
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

AIR CANISTER CHAIN OF CUSTODY

ALS

If sourced from an ALS Laboratory: please tick →

Client Supplied Canister(s)? Y / N

CLIENT: Golder Associates
OFFICE: Sydney
PROJECT: SMW
PROJECT NO: 1791865
CANISTER REQUEST NO:
PURCHASE ORDER NO.:
PROJECT MANAGER: Barry Houston
SAMPLER: Philippe Koenig
CONTACT PH: 9478 3900
SAMPLER MOBILE: 0423856195
COC Emailed to ALS? (YES / NO)
EDD FORMAT (or default): default+ ESDAT
Email Reports to (will default to PM if no other addresses are listed): bhouston + rbonetti@golder.com.au
Email Invoice to (will default to PM if no other addresses are listed): " "
COMMENTS/SPECIAL HANDLING/REPLACEMENT OR RETURN INSTRUCTIONS:

TURNAROUND REQUIREMENTS : (Standard TAT may be extended for multiple sequential analysis suites)
☑ Standard TAT (List due date):
☐ Non Standard or urgent TAT (List due date):
ALS QUOTE NO.: EN-002-18
COUNTRY OF ORIGIN:

COC SEQUENCE NUMBER (Circle)
COC: 1 2 3 4 5 6 7
OF: 1 2 3 4 5 6 7

LABORATORY USE ONLY (Circle) — Receivers to initial and date/time
Custody Seal Intact? Rec Lab Y / N NE Y / N N/A
Valves closed on Receipt? Rec Lab Y / N NE Y / N N/A
Canister/Sampler Complete and Not Damaged Yes No
Other comment: Temperature °C

RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:
23/10/18 (Signature and date/time)	(Signature and date/time)	(Signature and date/time)	(Signature and date/time)
RECEIVED BY: 24/10/18 17:00 (Signature and date/time)	RECEIVED BY: (Signature and date/time)	RECEIVED BY: (Signature and date/time)	RECEIVED BY: (Signature and date/time)

(K3)

GAS SAMPLE CONTAINER INFORMATION

ALS USE ONLY LAB ID	CANISTER SERIAL NO.	FLOW CONTROLLER SERIAL NO.	CLIENT SAMPLE ID	DATE / TIME SAMPLED	MATRIX (eg Air, Soil Gas)	Canister Gauge Pressures (PSI) Pre-Sampling	Post Sampling	Reporting Requirements LORs: Ambient Air	Soil Gas (NEPM)	Other / Indoor	Units: ppbv, µg/m³	ppmv, mg/m³	ANALYSES REQUESTED (Suite Codes must be listed to attract suite price): SG-PH2	EP104G					Additional Information
1	1319	024	SRT_BH408	21/10/18 9:08	Soil gas	-30	-6		X			X	X	X					Comments on LORs required, potential hazards, likely contaminant levels, or samples requiring specific QC analysis etc. (LOR defaults to routine method LOR after dilution)
2	1098	035	SRT_BH421	21/10/18 10:12	" "	-27	-5		X			X	X	X					
3	1296	078	SRT_BH422	21/10/18 11:10	" "	-30	-5		X			X	X	X					
4	710	121	SRT_BH415	21/10/18 12:02	" "	-30	-6		X			X	X	X					
5	1119	112	SRT_BH416	21/10/18 13:34	" "	-26	-9		X			X	X	X					
6	1102	102	SRT_BH417	21/10/18 14:26	" "	-34	-8		X			X	X	X					
7	1315	121	SRT_QC100	21/10/18	" "	-30	-8		X			X	X	X					
8	707		Unused.																

Environmental Division
Newcastle
Work Order Reference
EN1807084

Telephone : + 61 2 4014 2500

Job Specific Instructions:

ENFM (204A/2)

AIR SAMPLING EQUIPMENT DISPATCH RECORD

Inquiries: Client Services - Newcastle **Phone: +61 (02) 4014 2500** E-mail: alsenviro.newcastle@alsglobal.com

Dispatch to:		ALS Use ONLY	
Client / Office:	Golder		
Contact:	Rita Bonetti	Request Received By:	DB 17/10/18
Telephone:	0437 039 929	Deliver By:	19/10/18
ALS Quotation:	1791865	Dispatched By:	17/10/18
Delivery Address:	124 Pacific Highway	Workorder:	
	St. Leonards NSW 2065	Agreed Rent Free Period:	21 days

SPECIAL INSTRUCTIONS:.....

Air Sampling Equipment Request

CANISTERS

No.	Canister Type	Size	Gauge	Valve	Cap	Rental[1]	No. Returned	Analysts Initials & Date: Leak Checked	Certified OK
8	Minican™	1.4L	No	QT	Yes	$120 ea		PF	17/10/18

CONNECTORS AND FLOW CONTROL DEVICES

No.	Equipment Type	Duration (hrs)	Flow (ml/min)	T-Piece	Gauge	Certified	Sealed / Vacuum	Connection (Q Quick Connect, S Swagelok)	No. Returned	Rental[1]
6	Soil Gas Sampling Train		60	No	Yes	Yes	Yes / Yes	Q		Incl Above
1	Duplicate Soil Gas Sampler		60	Yes	Yes	Yes	Yes / Yes	Q		Incl Above
7	Female QT Connectors	-	-	-	-	-	-	Q		$120 ea. Replacement
1	Male QT Connector	-	-	-	-	-	-	Q		$120 ea. Replacement
1	Pressure Gauge - QT	-	-	-	-	-	Yes / Yes	Q		$250 ea. Replacement
2	Sampling Kit Case – Soil Gas	-	-	-	-	-	Yes	NA		$200 Replacement

☐ Other (specify) _____

[1] *Refer to Acceptance of Terms*

ALS use only			
Sampling Guide Included (Y / N)	Packed by: PF		Dispatch Time / Date 17/10/18
Number of Boxes:	2	Consignment Note Number:	FCN90225434
Courier / Dispatcher:	TNT	Consignment Dispatched by:	KP 17-10-18

AIR SAMPLING EQUIPMENT DISPATCH RECORD

ALS SUPPLIED EQUIPMENT

Item	Quantity	Item Description	Serial Nos
	8	1.4 L Silonite Mini-Can with QT Valve	710 ✓ 707 ✓ 1098 ✓ 1102 ✓ 1119 ✓ 1296 ✓ 1315 ✓ 1319 ✓
	6	Soil Gas Sampling Train (Compact) with QT Connections ~60ml/min #3	024 ✓ 035 ✓ 078 ✓ 102 ✓ 112 ✓ 121 ✓
	1	Soil Gas Duplicate Sampling Train with QT Connections - 60ml/min #3	074 ✓

ENFMCDR1.1 11-05-11

RIGHT SOLUTIONS

Brisbane · Adelaide · Bendigo · Canberra · Geelong · Gladstone · Melbourne (Scoresby) · Melbourne (Springvale) · Mudgee · Newcastle · Nowra · Perth · Wollongong · Sydney · Townsville · Traralgon · Wangaratta

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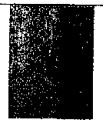
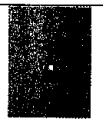
AIR SAMPLING EQUIPMENT — DISPATCH RECORD

Item	Quantity	Item Description	Serial Nos
	1	Vacuum Gauge with female QT Connection (-34 Hg)	9.021 /
	7	Female QT to ¼" tube connector	/
	1	Male QT to ¼" tube connector	/

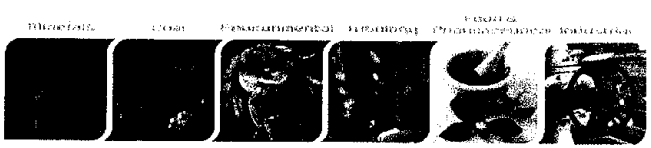
Acceptance of Terms:

Acceptance and use of the accompanying ALS Air Sampling Equipment constitutes acceptance of the following terms:

1. This equipment remains the property of ALS Laboratory Group.
2. Subject to the conditions below and unless stated otherwise in the relevant quotation, the rental and use of this equipment is included the price of analysis.
3. No responsibility is accepted by ALS for equipment failures that have been caused by, or incorrectly specified by, the client. Interfacing of ALS equipment with other sampling equipment or structures is solely the client's responsibility.
4. Sampling equipment is configured and supplied based on client supplied requirements. ALS will take all reasonable care to meet these specifications but will not accept responsibility for changes in equipment calibration or failures during transit. Replacement equipment will be provided at no charge if required.
5. Equipment calibration and verification records are available for review on request. Verification reports are provided with equipment and electronic copies are available on request.
6. This air sampling equipment is provided solely for the use of the nominated client. Responsibility for ensuring the equipment is not damaged and for returning this equipment to ALS remains with the nominated client until all equipment is returned to the ALS Group.
7. Unless otherwise agreed in writing, if equipment is not returned within the agreed rent free period after dispatch, the quoted rental fees above will apply per week per unit thereafter. If equipment is returned unused, the cleaning fees quoted will apply (1 weeks rental charge). If sampling equipment return is delayed, please contact the laboratory prior to expiry of the rent free period to negotiate and extension.
8. Irreparably damaged equipment and any equipment not returned within 10 days will be charged to the client at a replacement cost per unit equal to 15 weeks rent, less rental costs already paid.
9. Cleaning costs will apply for equipment marked or defaced by the client. Please mark labels for sample identification and recording of field data.

ENFMCDR1.1 11-05-11

RIGHT SOLUTIONS



AIR SAMPLING EQUIPMENT — DISPATCH RECORD

If these conditions are not acceptable please return all equipment to ALS Newcastle immediately.

EQUIPMENT SUPPLY AND LOGISTICS

Additional air sampling equipment can be ordered through any ALS Environmental Laboratory and supplied direct to your site or office by courier. For the fastest turnaround, equipment should be returned direct to Newcastle Laboratory.

ALS Environmental, Newcastle
5/585 Maitland Road
Mayfield West, NSW 2304

Note that Dangerous Goods Transport Regulations may apply after sampling if the air cylinders are pressurised or contain hazardous materials.

ENFMCDR1.1 11-05-11

RIGHT SOLUTIONS

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SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EN1807084**

Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Newcastle
Contact	: MR BARRY HOUSTON	Contact	:
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
E-mail	: bhouston@golder.com.au	E-mail	:
Telephone	: +61 02 9478 3900	Telephone	: +61 2 4014 2500
Facsimile	: +61 02 9478 3901	Facsimile	: +61 2 4967 7382
Project	: 1791865 SMW	Page	: 1 of 3
Order number	: PO14880	Quote number	: EM2017GOLASS0027 (EN/002/18 National BQ)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: Philippe Koenig		

Dates

Date Samples Received	: 24-Oct-2018 17:00	Issue Date	: 26-Oct-2018
Client Requested Due Date	: 02-Nov-2018	Scheduled Reporting Date	: **02-Nov-2018**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: ----	Temperature	: ----
Receipt Detail	:	No. of samples received / analysed	: 8 / 8

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

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.

EN1807084-001	: 21-Oct-2018 09:08	: SRT_BH408 - C1319_S024
EN1807084-002	: 21-Oct-2018 10:12	: SRT_BH421 - C1098_S035
EN1807084-003	: 21-Oct-2018 11:10	: SRT_BH422 - C1296_S078
EN1807084-004	: 21-Oct-2018 12:02	: SRT_BH415 - C710_S121
EN1807084-005	: 21-Oct-2018 13:34	: SRT_BH416 - C1119_S112
EN1807084-006	: 21-Oct-2018 14:26	: SRT_BH417 - C1102_S102
EN1807084-007	: [21-Oct-2018]	: SRT_QC100 - C1315_S121

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: **AIR**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	AIR - CAN-SG1 Canister Sampling - Soil Gas Field Data	AIR - EP104G Permanent Gases	AIR - SG-PH2 Soil Gas - TO15/NEPM TRH
EN1807084-001	21-Oct-2018 09:08	SRT_BH408 C1319_S024		✓	✓
EN1807084-002	21-Oct-2018 10:12	SRT_BH421 C1098_S035		✓	✓
EN1807084-003	21-Oct-2018 11:10	SRT_BH422 C1296_S078		✓	✓
EN1807084-004	21-Oct-2018 12:02	SRT_BH415 C710_S121		✓	✓
EN1807084-005	21-Oct-2018 13:34	SRT_BH416 C1119_S112		✓	✓
EN1807084-006	21-Oct-2018 14:26	SRT_BH417 C1102_S102		✓	✓
EN1807084-007	21-Oct-2018 00:00	SRT_QC100 C1315_S121		✓	✓
EN1807084-008	21-Oct-2018 00:00	Unused C707	✓		

Proactive Holding Time Report

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

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	au_accountspayable@golder.com.au

BARRY HOUSTON

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

R BONETTI

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

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EN1807084**	Page	: 1 of 15
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Newcastle
Contact	: MR BARRY HOUSTON	Contact	:
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: +61 02 9478 3900	Telephone	: +61 2 4014 2500
Project	: 1791865 SMW	Date Samples Received	: 24-Oct-2018 17:00
Order number	: PO14880	Date Analysis Commenced	: 26-Oct-2018
C-O-C number	: ----	Issue Date	: 31-Oct-2018 15:22
Sampler	: Philippe Koenig		
Site	: ----		
Quote number	: EN/002/18 National BQ		
No. of samples received	: 8		
No. of samples analysed	: 8		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

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*
Dale Semple	Analyst	Newcastle - Organics, Mayfield West, NSW
Dale Semple	Analyst	Newcastle, Mayfield West, NSW
Daniel Junek	Senior Air Analyst	Newcastle - Organics, Mayfield West, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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.

- EP101, EP103: Results reported in mg/m³ are calculated from PPMV results based on a temperature of 25°C and atmospheric pressure of 101.3 kPa.
- CAN-001: Results for Pressure - As Received are measured under controlled conditions using calibrated laboratory gauges. These results are expressed as an Absolute Pressure. Equivalent gauge pressures may be calculated by subtracting the Pressure - Laboratory Atmosphere taken at the time of measurement.
- CAN-001: Results for Pressure - Gauge as Received are obtained from uncalibrated field gauges and are indicative only. These results may not precisely match calibrated gauge readings and may vary from field measurements due to changes in temperature and pressure
- EP104: Results reported in mg/m³ are calculated from Mol% results based on a temperature of 25°C and atmospheric pressure of 101.3 kPa
- EP104: Sample canisters were received at sub-ambient pressures and required dilution in the laboratory prior to analysis. LOR values have been adjusted accordingly

Analytical Results

Sub-Matrix: SOIL GAS (Matrix: AIR)			Client sample ID	SRT_BH408 C1319_S024	SRT_BH421 C1098_S035	SRT_BH422 C1296_S078	SRT_BH415 C710_S121	SRT_BH416 C1119_S112
			Client sampling date / time	21-Oct-2018 09:08	21-Oct-2018 10:12	21-Oct-2018 11:10	21-Oct-2018 12:02	21-Oct-2018 13:34
Compound	CAS Number	LOR	Unit	EN1807084-001	EN1807084-002	EN1807084-003	EN1807084-004	EN1807084-005
				Result	Result	Result	Result	Result
EP101: VOCs by USEPA Method TO15 (Calculated Concentration)								
Freon 12	75-71-8	0.250	mg/m³	**3.08**	<0.250	<0.250	<0.250	<0.250
Chloromethane	74-87-3	0.100	mg/m³	<0.100	<0.100	<0.100	<0.100	<0.100
Freon 114	76-14-2	0.350	mg/m³	<0.350	<0.350	<0.350	<0.350	<0.350
Vinyl chloride	75-01-4	0.0051	mg/m³	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051
Bromomethane	74-83-9	0.190	mg/m³	<0.190	<0.190	<0.190	<0.190	<0.190
Chloroethane	75-00-3	0.130	mg/m³	<0.130	<0.130	<0.130	<0.130	<0.130
Freon 11	75-69-4	0.280	mg/m³	**1.12**	<0.280	<0.280	<0.280	<0.280
1.1-Dichloroethene	75-35-4	0.200	mg/m³	<0.200	<0.200	<0.200	<0.200	<0.200
Dichloromethane	75-09-2	0.170	mg/m³	<0.170	<0.170	<0.170	<0.170	<0.170
Freon 113	76-13-1	0.380	mg/m³	<0.380	<0.380	<0.380	<0.380	<0.380
1.1-Dichloroethane	75-34-3	0.200	mg/m³	<0.200	<0.200	<0.200	<0.200	<0.200
cis-1.2-Dichloroethene	156-59-2	0.0200	mg/m³	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200
Chloroform	67-66-3	0.240	mg/m³	<0.240	<0.240	<0.240	<0.240	<0.240
1.2-Dichloroethane	107-06-2	0.200	mg/m³	<0.200	<0.200	<0.200	<0.200	<0.200
1.1.1-Trichloroethane	71-55-6	0.270	mg/m³	<0.270	<0.270	<0.270	<0.270	<0.270
Benzene	71-43-2	0.100	mg/m³	<0.100	<0.100	<0.100	<0.100	<0.100
Carbon Tetrachloride	56-23-5	0.310	mg/m³	<0.310	<0.310	<0.310	<0.310	<0.310
1.2-Dichloropropane	78-87-5	0.230	mg/m³	<0.230	<0.230	<0.230	<0.230	<0.230
Trichloroethene	79-01-6	0.0050	mg/m³	**0.0070**	<0.0050	<0.0050	<0.0050	<0.0050
cis-1.3-Dichloropropylene	10061-01-5	0.230	mg/m³	<0.230	<0.230	<0.230	<0.230	<0.230
trans-1.3-Dichloropropene	10061-02-6	0.230	mg/m³	<0.230	<0.230	<0.230	<0.230	<0.230
1.1.2-Trichloroethane	79-00-5	0.270	mg/m³	<0.270	<0.270	<0.270	<0.270	<0.270
Toluene	108-88-3	0.190	mg/m³	<0.190	<0.190	<0.190	<0.190	<0.190
1.2-Dibromoethane (EDB)	106-93-4	0.380	mg/m³	<0.380	<0.380	<0.380	<0.380	<0.380
Tetrachloroethene	127-18-4	0.340	mg/m³	<0.340	<0.340	<0.340	**2.51**	**8.40**
Chlorobenzene	108-90-7	0.230	mg/m³	<0.230	<0.230	<0.230	<0.230	<0.230
Ethylbenzene	100-41-4	0.220	mg/m³	<0.220	<0.220	<0.220	<0.220	<0.220
meta- & para-Xylene	108-38-3 106-42-3	0.430	mg/m³	<0.430	<0.430	<0.430	<0.430	<0.430
Styrene	100-42-5	0.210	mg/m³	<0.210	<0.210	<0.210	<0.210	<0.210
1.1.2.2-Tetrachloroethane	79-34-5	0.340	mg/m³	<0.340	<0.340	<0.340	<0.340	<0.340
ortho-Xylene	95-47-6	0.220	mg/m³	<0.220	<0.220	<0.220	<0.220	<0.220
4-Ethyltoluene	622-96-8	0.240	mg/m³	<0.240	<0.240	<0.240	<0.240	<0.240
Total Xylenes	----	0.650	mg/m³	<0.650	<0.650	<0.650	<0.650	<0.650
1.3.5-Trimethylbenzene	108-67-8	0.240	mg/m³	<0.240	<0.240	<0.240	<0.240	<0.240

Analytical Results

Sub-Matrix: SOIL GAS (Matrix: AIR)				Client sample ID	SRT_BH408 C1319_S024	SRT_BH421 C1098_S035	SRT_BH422 C1296_S078	SRT_BH415 C710_S121	SRT_BH416 C1119_S112
				Client sampling date / time	21-Oct-2018 09:08	21-Oct-2018 10:12	21-Oct-2018 11:10	21-Oct-2018 12:02	21-Oct-2018 13:34
Compound	CAS Number	LOR	Unit		EN1807084-001	EN1807084-002	EN1807084-003	EN1807084-004	EN1807084-005
					Result	Result	Result	Result	Result
EP101: VOCs by USEPA Method TO15 (Calculated Concentration) - Continued									
1.2.4-Trimethylbenzene	95-63-6	0.240	mg/m³		<0.240	<0.240	<0.240	<0.240	<0.240
1.3-Dichlorobenzene	541-73-1	0.300	mg/m³		<0.300	<0.300	<0.300	<0.300	<0.300
Benzylchloride	100-44-7	0.260	mg/m³		<0.260	<0.260	<0.260	<0.260	<0.260
1.4-Dichlorobenzene	106-46-7	0.300	mg/m³		<0.300	<0.300	<0.300	<0.300	<0.300
1.2-Dichlorobenzene	95-50-1	0.300	mg/m³		<0.300	<0.300	<0.300	<0.300	<0.300
1.2.4-Trichlorobenzene	120-82-1	0.370	mg/m³		<0.370	<0.370	<0.370	<0.370	<0.370
Hexachlorobutadiene	87-68-3	0.530	mg/m³		<0.530	<0.530	<0.530	<0.530	<0.530
Acetone	67-64-1	0.120	mg/m³		<0.120	<0.120	<0.120	<0.120	<0.120
Bromodichloromethane	75-27-4	0.340	mg/m³		<0.340	<0.340	<0.340	<0.340	<0.340
1.3-Butadiene	106-99-0	0.110	mg/m³		<0.110	<0.110	<0.110	<0.110	<0.110
Carbon disulfide	75-15-0	0.160	mg/m³		<0.160	<0.160	<0.160	<0.160	<0.160
1-Chloro-2-propene (Allyl chloride)	107-05-1	0.160	mg/m³		<0.160	<0.160	<0.160	<0.160	<0.160
Cyclohexane	110-82-7	0.170	mg/m³		<0.170	<0.170	<0.170	<0.170	<0.170
Dibromochloromethane	124-48-1	0.430	mg/m³		<0.430	<0.430	<0.430	<0.430	<0.430
1.4-Dioxane	123-91-1	0.180	mg/m³		<0.180	<0.180	<0.180	<0.180	<0.180
Ethylacetate	9002-89-5	0.180	mg/m³		<0.180	<0.180	<0.180	<0.180	<0.180
trans-1.2-Dichloroethene	156-60-5	0.200	mg/m³		<0.200	<0.200	<0.200	<0.200	<0.200
Heptane	142-82-5	0.200	mg/m³		<0.200	<0.200	<0.200	<0.200	<0.200
Hexane	110-54-3	0.180	mg/m³		<0.180	<0.180	<0.180	<0.180	<0.180
Isooctane	540-84-1	0.230	mg/m³		<0.230	<0.230	<0.230	<0.230	<0.230
Isopropyl Alcohol	67-63-0	0.120	mg/m³		<0.120	<0.120	<0.120	<0.120	<0.120
2-Butanone (MEK)	78-93-3	0.150	mg/m³		<0.150	<0.150	<0.150	<0.150	<0.150
Methyl iso-Butyl ketone	108-10-1	0.200	mg/m³		<0.200	<0.200	<0.200	<0.200	<0.200
2-Hexanone (MBK)	591-78-6	0.200	mg/m³		<0.200	<0.200	<0.200	<0.200	<0.200
Propene	115-07-1	0.0900	mg/m³		<0.0900	<0.0900	<0.0900	<0.0900	<0.0900
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.180	mg/m³		<0.180	<0.180	<0.180	<0.180	<0.180
Tetrahydrofuran	109-99-9	0.150	mg/m³		<0.150	<0.150	<0.150	<0.150	<0.150
Bromoform	75-25-2	0.520	mg/m³		<0.520	<0.520	<0.520	<0.520	<0.520
Vinyl Acetate	108-05-4	0.180	mg/m³		<0.180	<0.180	<0.180	<0.180	<0.180
Vinyl bromide	593-60-2	0.220	mg/m³		<0.220	<0.220	<0.220	<0.220	<0.220
Naphthalene	91-20-3	0.100	mg/m³		<0.100	<0.100	<0.100	<0.100	<0.100
EP103: Petroleum Hydrocarbons in Gaseous Samples									
C6 - C9 Fraction	----	5.00	ppmv		<5.00	<5.00	<5.00	<5.00	<5.00

Analytical Results

Sub-Matrix: SOIL GAS (Matrix: AIR)				Client sample ID	SRT_BH408 C1319_S024	SRT_BH421 C1098_S035	SRT_BH422 C1296_S078	SRT_BH415 C710_S121	SRT_BH416 C1119_S112
				Client sampling date / time	21-Oct-2018 09:08	21-Oct-2018 10:12	21-Oct-2018 11:10	21-Oct-2018 12:02	21-Oct-2018 13:34
Compound	CAS Number	LOR	Unit		EN1807084-001	EN1807084-002	EN1807084-003	EN1807084-004	EN1807084-005
					Result	Result	Result	Result	Result
EP103: Petroleum Hydrocarbons in Gaseous Samples - Continued									
C10 - C14 Fraction	----	5.00	ppmv		<5.00	<5.00	<5.00	<5.00	<5.00
EP103: Petroleum Hydrocarbons in Gaseous Samples (Calc Conc)									
C6 - C9 Fraction	----	20.0	mg/m³		<20.0	<20.0	<20.0	<20.0	<20.0
C10 - C14 Fraction	----	35.0	mg/m³		<35.0	<35.0	<35.0	<35.0	<35.0
EP103: Total Recoverable Hydrocarbons - NEPM 2013									
C6 - C10 Fraction	C6_C10	5.00	ppmv		<5.00	<5.00	<5.00	<5.00	<5.00
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	5.00	ppmv		<5.00	<5.00	<5.00	<5.00	<5.00
>C10 - C16 Fraction	----	5.00	ppmv		<5.00	<5.00	<5.00	<5.00	<5.00
>C10 - C16 Fraction minus Naphthalene (F2)	----	5.00	ppmv		<5.00	<5.00	<5.00	<5.00	<5.00
EP103: Total Recoverable Hydrocarbons - NEPM 2013 (Calc Conc)									
C6 - C10 Fraction	C6_C10	20.0	mg/m³		<20.0	<20.0	<20.0	<20.0	<20.0
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20.0	mg/m³		<20.0	<20.0	<20.0	<20.0	<20.0
>C10 - C16 Fraction	----	40.0	mg/m³		<40.0	<40.0	<40.0	<40.0	<40.0
>C10 - C16 Fraction minus Naphthalene (F2)	----	40.0	mg/m³		<40.0	<40.0	<40.0	<40.0	<40.0
EP104: Permanent Gases									
Carbon Dioxide	124-38-9	0.005	Mol %		**0.728**	**0.825**	**0.881**	**2.37**	**1.24**
Carbon Monoxide	630-08-0	0.0005	Mol %		<0.0010	<0.0010	<0.0010	<0.0010	<0.0012
Hydrogen	1333-74-0	0.005	Mol %		<0.010	<0.010	<0.010	<0.010	<0.012
Helium	7440-59-7	0.005	Mol %		<0.010	<0.010	<0.010	**0.011**	<0.012
Oxygen	7782-44-7	0.10	Mol %		**17.4**	**15.4**	**15.4**	**13.2**	**11.5**
EP104: Permanent Gases (Calc Conc)									
Carbon Dioxide	124-38-9	90	mg/m³		**13100**	**14800**	**15800**	**42700**	**22300**
Carbon Monoxide	630-08-0	5	mg/m³		<10	<10	<10	<10	<12
Hydrogen	1333-74-0	4	mg/m³		<8	<8	<8	<8	<10
Oxygen	7782-44-7	1310	mg/m³		**227000**	**201000**	**201000**	**173000**	**151000**
Helium	7440-59-7	8	mg/m³		<16	<16	<16	**17**	<20
Sampling Quality Assurance									
Pressure - As received	PRESSURE	0.1	kPaa		**89.1**	**80.9**	**90.6**	**89.6**	**69.5**
Pressure - Laboratory Atmosphere	----	0.1	kPaa		**101**	**101**	**101**	**101**	**101**
Temperature as Received	----	0.1	°C		**21.0**	**21.0**	**21.0**	**21.0**	**21.0**

Analytical Results

Sub-Matrix: SOIL GAS (Matrix: AIR)			Client sample ID	SRT_BH408 C1319_S024	SRT_BH421 C1098_S035	SRT_BH422 C1296_S078	SRT_BH415 C710_S121	SRT_BH416 C1119_S112
			Client sampling date / time	21-Oct-2018 09:08	21-Oct-2018 10:12	21-Oct-2018 11:10	21-Oct-2018 12:02	21-Oct-2018 13:34
Compound	CAS Number	LOR	Unit	EN1807084-001	EN1807084-002	EN1807084-003	EN1807084-004	EN1807084-005
				Result	Result	Result	Result	Result
Sampling Quality Assurance - Continued								
Vacuum - As received	----	0.03	Inches Hg	**3.63**	**6.05**	**3.22**	**3.48**	**9.45**
USEPA Air Toxics Method TO15r								
Freon 12	75-71-8	0.0500	ppmv	**0.624**	<0.0500	<0.0500	<0.0500	<0.0500
Chloromethane	74-87-3	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Freon 114	76-14-2	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Vinyl chloride	75-01-4	0.0020	ppmv	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Bromomethane	74-83-9	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Chloroethane	75-00-3	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Freon 11	75-69-4	0.0500	ppmv	**0.199**	<0.0500	<0.0500	<0.0500	<0.0500
1.1-Dichloroethene	75-35-4	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Dichloromethane	75-09-2	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Freon 113	76-13-1	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
1.1-Dichloroethane	75-34-3	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
cis-1.2-Dichloroethene	156-59-2	0.0050	ppmv	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Chloroform	67-66-3	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
1.2-Dichloroethane	107-06-2	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
1.1.1-Trichloroethane	71-55-6	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Benzene	71-43-2	0.0300	ppmv	<0.0300	<0.0300	<0.0300	<0.0300	<0.0300
Carbon Tetrachloride	56-23-5	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
1.2-Dichloropropane	78-87-5	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Trichloroethene	79-01-6	0.0010	ppmv	**0.0013**	<0.0010	<0.0010	<0.0010	<0.0010
cis-1.3-Dichloropropylene	10061-01-5	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
trans-1.3-Dichloropropene	10061-02-6	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
1.1.2-Trichloroethane	79-00-5	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Toluene	108-88-3	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
1.2-Dibromoethane (EDB)	106-93-4	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Tetrachloroethene	127-18-4	0.0500	ppmv	<0.0500	<0.0500	<0.0500	**0.371**	**1.24**
Chlorobenzene	108-90-7	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Ethylbenzene	100-41-4	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
meta- & para-Xylene	108-38-3 106-42-3	0.100	ppmv	<0.100	<0.100	<0.100	<0.100	<0.100
Styrene	100-42-5	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
1.1.2.2-Tetrachloroethane	79-34-5	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
ortho-Xylene	95-47-6	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
4-Ethyltoluene	622-96-8	0.0500	ppmv	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500

Analytical Results

Sub-Matrix: SOIL GAS (Matrix: AIR)				Client sample ID	SRT_BH408 C1319_S024	SRT_BH421 C1098_S035	SRT_BH422 C1296_S078	SRT_BH415 C710_S121	SRT_BH416 C1119_S112
				Client sampling date / time	21-Oct-2018 09:08	21-Oct-2018 10:12	21-Oct-2018 11:10	21-Oct-2018 12:02	21-Oct-2018 13:34
Compound	CAS Number	LOR	Unit		EN1807084-001	EN1807084-002	EN1807084-003	EN1807084-004	EN1807084-005
					Result	Result	Result	Result	Result
USEPA Air Toxics Method TO15r - Continued									
1.3.5-Trimethylbenzene	108-67-8	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
1.2.4-Trimethylbenzene	95-63-6	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
1.3-Dichlorobenzene	541-73-1	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Benzylchloride	100-44-7	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
1.4-Dichlorobenzene	106-46-7	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
1.2-Dichlorobenzene	95-50-1	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
1.2.4-Trichlorobenzene	120-82-1	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Hexachlorobutadiene	87-68-3	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Acetone	67-64-1	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Bromodichloromethane	75-27-4	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
1.3-Butadiene	106-99-0	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Carbon disulfide	75-15-0	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
1-Chloro-2-propene (Allyl chloride)	107-05-1	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Cyclohexane	110-82-7	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Dibromochloromethane	124-48-1	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
1.4-Dioxane	123-91-1	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Ethylacetate	9002-89-5	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
trans-1.2-Dichloroethene	156-60-5	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Heptane	142-82-5	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Hexane	110-54-3	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Isooctane	540-84-1	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Isopropyl Alcohol	67-63-0	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
2-Butanone (MEK)	78-93-3	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Methyl iso-Butyl ketone	108-10-1	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
2-Hexanone (MBK)	591-78-6	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Propene	115-07-1	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Tetrahydrofuran	109-99-9	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Bromoform	75-25-2	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Vinyl Acetate	108-05-4	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Vinyl bromide	593-60-2	0.0500	ppmv		<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Naphthalene	91-20-3	0.0190	ppmv		<0.0190	<0.0190	<0.0190	<0.0190	<0.0190
USEPA Air Toxics Method TO15r Surrogates									

Analytical Results

Sub-Matrix: SOIL GAS (Matrix: AIR)				Client sample ID	SRT_BH408 C1319_S024	SRT_BH421 C1098_S035	SRT_BH422 C1296_S078	SRT_BH415 C710_S121	SRT_BH416 C1119_S112
				Client sampling date / time	21-Oct-2018 09:08	21-Oct-2018 10:12	21-Oct-2018 11:10	21-Oct-2018 12:02	21-Oct-2018 13:34
Compound	CAS Number	LOR	Unit		EN1807084-001	EN1807084-002	EN1807084-003	EN1807084-004	EN1807084-005
					Result	Result	Result	Result	Result
USEPA Air Toxics Method TO15r Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.5	%		**96.1**	**96.0**	**96.6**	**95.6**	**95.1**

Analytical Results

Sub-Matrix: SOIL GAS (Matrix: AIR)			Client sample ID	SRT_BH417 C1102_S102	SRT_QC100 C1315_S121	Unused C707	----	----
			Client sampling date / time	21-Oct-2018 14:26	21-Oct-2018 00:00	21-Oct-2018 00:00	----	----
Compound	CAS Number	LOR	Unit	EN1807084-006	EN1807084-007	EN1807084-008	--------	--------
				Result	Result	Result	----	----
EP101: VOCs by USEPA Method TO15 (Calculated Concentration)								
Freon 12	75-71-8	0.250	mg/m³	<0.250	<0.250	----	----	----
Chloromethane	74-87-3	0.100	mg/m³	<0.100	<0.100	----	----	----
Freon 114	76-14-2	0.350	mg/m³	<0.350	<0.350	----	----	----
Vinyl chloride	75-01-4	0.0051	mg/m³	<0.0051	<0.0051	----	----	----
Bromomethane	74-83-9	0.190	mg/m³	<0.190	<0.190	----	----	----
Chloroethane	75-00-3	0.130	mg/m³	<0.130	<0.130	----	----	----
Freon 11	75-69-4	0.280	mg/m³	<0.280	<0.280	----	----	----
1.1-Dichloroethene	75-35-4	0.200	mg/m³	<0.200	<0.200	----	----	----
Dichloromethane	75-09-2	0.170	mg/m³	<0.170	<0.170	----	----	----
Freon 113	76-13-1	0.380	mg/m³	<0.380	<0.380	----	----	----
1.1-Dichloroethane	75-34-3	0.200	mg/m³	<0.200	<0.200	----	----	----
cis-1.2-Dichloroethene	156-59-2	0.0200	mg/m³	<0.0200	<0.0200	----	----	----
Chloroform	67-66-3	0.240	mg/m³	<0.240	<0.240	----	----	----
1.2-Dichloroethane	107-06-2	0.200	mg/m³	<0.200	<0.200	----	----	----
1.1.1-Trichloroethane	71-55-6	0.270	mg/m³	<0.270	<0.270	----	----	----
Benzene	71-43-2	0.100	mg/m³	<0.100	<0.100	----	----	----
Carbon Tetrachloride	56-23-5	0.310	mg/m³	<0.310	<0.310	----	----	----
1.2-Dichloropropane	78-87-5	0.230	mg/m³	<0.230	<0.230	----	----	----
Trichloroethene	79-01-6	0.0050	mg/m³	<0.0050	<0.0050	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	0.230	mg/m³	<0.230	<0.230	----	----	----
trans-1.3-Dichloropropene	10061-02-6	0.230	mg/m³	<0.230	<0.230	----	----	----
1.1.2-Trichloroethane	79-00-5	0.270	mg/m³	<0.270	<0.270	----	----	----
Toluene	108-88-3	0.190	mg/m³	<0.190	<0.190	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	0.380	mg/m³	<0.380	<0.380	----	----	----
Tetrachloroethene	127-18-4	0.340	mg/m³	<0.340	**2.52**	----	----	----
Chlorobenzene	108-90-7	0.230	mg/m³	<0.230	<0.230	----	----	----
Ethylbenzene	100-41-4	0.220	mg/m³	<0.220	<0.220	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.430	mg/m³	<0.430	<0.430	----	----	----
Styrene	100-42-5	0.210	mg/m³	<0.210	<0.210	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.340	mg/m³	<0.340	<0.340	----	----	----
ortho-Xylene	95-47-6	0.220	mg/m³	<0.220	<0.220	----	----	----
4-Ethyltoluene	622-96-8	0.240	mg/m³	<0.240	<0.240	----	----	----
Total Xylenes	----	0.650	mg/m³	<0.650	<0.650	----	----	----
1.3.5-Trimethylbenzene	108-67-8	0.240	mg/m³	<0.240	<0.240	----	----	----

Analytical Results

Sub-Matrix: SOIL GAS (Matrix: AIR)			Client sample ID	SRT_BH417 C1102_S102	SRT_QC100 C1315_S121	Unused C707	----	----
			Client sampling date / time	21-Oct-2018 14:26	21-Oct-2018 00:00	21-Oct-2018 00:00	----	----
Compound	CAS Number	LOR	Unit	EN1807084-006	EN1807084-007	EN1807084-008	--------	--------
				Result	Result	Result	----	----
EP101: VOCs by USEPA Method TO15 (Calculated Concentration) - Continued								
1.2.4-Trimethylbenzene	95-63-6	0.240	mg/m³	<0.240	<0.240	----	----	----
1.3-Dichlorobenzene	541-73-1	0.300	mg/m³	<0.300	<0.300	----	----	----
Benzylchloride	100-44-7	0.260	mg/m³	<0.260	<0.260	----	----	----
1.4-Dichlorobenzene	106-46-7	0.300	mg/m³	<0.300	<0.300	----	----	----
1.2-Dichlorobenzene	95-50-1	0.300	mg/m³	<0.300	<0.300	----	----	----
1.2.4-Trichlorobenzene	120-82-1	0.370	mg/m³	<0.370	<0.370	----	----	----
Hexachlorobutadiene	87-68-3	0.530	mg/m³	<0.530	<0.530	----	----	----
Acetone	67-64-1	0.120	mg/m³	<0.120	<0.120	----	----	----
Bromodichloromethane	75-27-4	0.340	mg/m³	<0.340	<0.340	----	----	----
1.3-Butadiene	106-99-0	0.110	mg/m³	<0.110	<0.110	----	----	----
Carbon disulfide	75-15-0	0.160	mg/m³	<0.160	<0.160	----	----	----
1-Chloro-2-propene (Allyl chloride)	107-05-1	0.160	mg/m³	<0.160	<0.160	----	----	----
Cyclohexane	110-82-7	0.170	mg/m³	<0.170	<0.170	----	----	----
Dibromochloromethane	124-48-1	0.430	mg/m³	<0.430	<0.430	----	----	----
1.4-Dioxane	123-91-1	0.180	mg/m³	<0.180	<0.180	----	----	----
Ethylacetate	9002-89-5	0.180	mg/m³	<0.180	<0.180	----	----	----
trans-1.2-Dichloroethene	156-60-5	0.200	mg/m³	<0.200	<0.200	----	----	----
Heptane	142-82-5	0.200	mg/m³	<0.200	<0.200	----	----	----
Hexane	110-54-3	0.180	mg/m³	<0.180	<0.180	----	----	----
Isooctane	540-84-1	0.230	mg/m³	<0.230	<0.230	----	----	----
Isopropyl Alcohol	67-63-0	0.120	mg/m³	<0.120	<0.120	----	----	----
2-Butanone (MEK)	78-93-3	0.150	mg/m³	<0.150	<0.150	----	----	----
Methyl iso-Butyl ketone	108-10-1	0.200	mg/m³	<0.200	<0.200	----	----	----
2-Hexanone (MBK)	591-78-6	0.200	mg/m³	<0.200	<0.200	----	----	----
Propene	115-07-1	0.0900	mg/m³	<0.0900	<0.0900	----	----	----
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.180	mg/m³	<0.180	<0.180	----	----	----
Tetrahydrofuran	109-99-9	0.150	mg/m³	<0.150	<0.150	----	----	----
Bromoform	75-25-2	0.520	mg/m³	<0.520	<0.520	----	----	----
Vinyl Acetate	108-05-4	0.180	mg/m³	<0.180	<0.180	----	----	----
Vinyl bromide	593-60-2	0.220	mg/m³	<0.220	<0.220	----	----	----
Naphthalene	91-20-3	0.100	mg/m³	<0.100	<0.100	----	----	----
EP103: Petroleum Hydrocarbons in Gaseous Samples								
C6 - C9 Fraction	----	5.00	ppmv	<5.00	<5.00	----	----	----

Analytical Results

Sub-Matrix: SOIL GAS (Matrix: AIR)				Client sample ID	SRT_BH417 C1102_S102	SRT_QC100 C1315_S121	Unused C707	----	----
				Client sampling date / time	21-Oct-2018 14:26	21-Oct-2018 00:00	21-Oct-2018 00:00	----	----
Compound	CAS Number	LOR	Unit		EN1807084-006	EN1807084-007	EN1807084-008	--------	--------
					Result	Result	Result	----	----
EP103: Petroleum Hydrocarbons in Gaseous Samples - Continued									
C10 - C14 Fraction	----	5.00	ppmv		<5.00	<5.00	----	----	----
EP103: Petroleum Hydrocarbons in Gaseous Samples (Calc Conc)									
C6 - C9 Fraction	----	20.0	mg/m³		<20.0	<20.0	----	----	----
C10 - C14 Fraction	----	35.0	mg/m³		<35.0	<35.0	----	----	----
EP103: Total Recoverable Hydrocarbons - NEPM 2013									
C6 - C10 Fraction	C6_C10	5.00	ppmv		<5.00	<5.00	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	5.00	ppmv		<5.00	<5.00	----	----	----
>C10 - C16 Fraction	----	5.00	ppmv		<5.00	<5.00	----	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	5.00	ppmv		<5.00	<5.00	----	----	----
EP103: Total Recoverable Hydrocarbons - NEPM 2013 (Calc Conc)									
C6 - C10 Fraction	C6_C10	20.0	mg/m³		<20.0	<20.0	----	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20.0	mg/m³		<20.0	<20.0	----	----	----
>C10 - C16 Fraction	----	40.0	mg/m³		<40.0	<40.0	----	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	40.0	mg/m³		<40.0	<40.0	----	----	----
EP104: Permanent Gases									
Carbon Dioxide	124-38-9	0.005	Mol %		**1.36**	**2.40**	----	----	----
Carbon Monoxide	630-08-0	0.0005	Mol %		<0.0010	<0.0010	----	----	----
Hydrogen	1333-74-0	0.005	Mol %		<0.010	<0.010	----	----	----
Helium	7440-59-7	0.005	Mol %		<0.010	**0.010**	----	----	----
Oxygen	7782-44-7	0.10	Mol %		**13.2**	**13.4**	----	----	----
EP104: Permanent Gases (Calc Conc)									
Carbon Dioxide	124-38-9	90	mg/m³		**24500**	**43100**	----	----	----
Carbon Monoxide	630-08-0	5	mg/m³		<10	<10	----	----	----
Hydrogen	1333-74-0	4	mg/m³		<8	<8	----	----	----
Oxygen	7782-44-7	1310	mg/m³		**172000**	**175000**	----	----	----
Helium	7440-59-7	8	mg/m³		<16	**16**	----	----	----
Sampling Quality Assurance									
Pressure - As received	PRESSURE	0.1	kPaa		**98.2**	**92.6**	<0.1	----	----
Pressure - Laboratory Atmosphere	----	0.1	kPaa		**101**	**101**	**101**	----	----
Temperature as Received	----	0.1	°C		**21.0**	**21.0**	**21.0**	----	----

Analytical Results

Sub-Matrix: SOIL GAS (Matrix: AIR)			Client sample ID	SRT_BH417 C1102_S102	SRT_QC100 C1315_S121	Unused C707	----	----
			Client sampling date / time	21-Oct-2018 14:26	21-Oct-2018 00:00	21-Oct-2018 00:00	----	----
Compound	CAS Number	LOR	Unit	EN1807084-006	EN1807084-007	EN1807084-008	--------	--------
				Result	Result	Result	----	----
Sampling Quality Assurance - Continued								
Vacuum - As received	----	0.03	Inches Hg	**0.94**	**2.63**	**29.8**	----	----
USEPA Air Toxics Method TO15r								
Freon 12	75-71-8	0.0500	ppmv	<0.0500	<0.0500	----	----	----
Chloromethane	74-87-3	0.0500	ppmv	<0.0500	<0.0500	----	----	----
Freon 114	76-14-2	0.0500	ppmv	<0.0500	<0.0500	----	----	----
Vinyl chloride	75-01-4	0.0020	ppmv	<0.0020	<0.0020	----	----	----
Bromomethane	74-83-9	0.0500	ppmv	<0.0500	<0.0500	----	----	----
Chloroethane	75-00-3	0.0500	ppmv	<0.0500	<0.0500	----	----	----
Freon 11	75-69-4	0.0500	ppmv	<0.0500	<0.0500	----	----	----
1.1-Dichloroethene	75-35-4	0.0500	ppmv	<0.0500	<0.0500	----	----	----
Dichloromethane	75-09-2	0.0500	ppmv	<0.0500	<0.0500	----	----	----
Freon 113	76-13-1	0.0500	ppmv	<0.0500	<0.0500	----	----	----
1.1-Dichloroethane	75-34-3	0.0500	ppmv	<0.0500	<0.0500	----	----	----
cis-1.2-Dichloroethene	156-59-2	0.0050	ppmv	<0.0050	<0.0050	----	----	----
Chloroform	67-66-3	0.0500	ppmv	<0.0500	<0.0500	----	----	----
1.2-Dichloroethane	107-06-2	0.0500	ppmv	<0.0500	<0.0500	----	----	----
1.1.1-Trichloroethane	71-55-6	0.0500	ppmv	<0.0500	<0.0500	----	----	----
Benzene	71-43-2	0.0300	ppmv	<0.0300	<0.0300	----	----	----
Carbon Tetrachloride	56-23-5	0.0500	ppmv	<0.0500	<0.0500	----	----	----
1.2-Dichloropropane	78-87-5	0.0500	ppmv	<0.0500	<0.0500	----	----	----
Trichloroethene	79-01-6	0.0010	ppmv	<0.0010	<0.0010	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	0.0500	ppmv	<0.0500	<0.0500	----	----	----
trans-1.3-Dichloropropene	10061-02-6	0.0500	ppmv	<0.0500	<0.0500	----	----	----
1.1.2-Trichloroethane	79-00-5	0.0500	ppmv	<0.0500	<0.0500	----	----	----
Toluene	108-88-3	0.0500	ppmv	<0.0500	<0.0500	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	0.0500	ppmv	<0.0500	<0.0500	----	----	----
Tetrachloroethene	127-18-4	0.0500	ppmv	<0.0500	**0.372**	----	----	----
Chlorobenzene	108-90-7	0.0500	ppmv	<0.0500	<0.0500	----	----	----
Ethylbenzene	100-41-4	0.0500	ppmv	<0.0500	<0.0500	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.100	ppmv	<0.100	<0.100	----	----	----
Styrene	100-42-5	0.0500	ppmv	<0.0500	<0.0500	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.0500	ppmv	<0.0500	<0.0500	----	----	----
ortho-Xylene	95-47-6	0.0500	ppmv	<0.0500	<0.0500	----	----	----
4-Ethyltoluene	622-96-8	0.0500	ppmv	<0.0500	<0.0500	----	----	----

Analytical Results

Sub-Matrix: SOIL GAS (Matrix: AIR)				Client sample ID	SRT_BH417 C1102_S102	SRT_QC100 C1315_S121	Unused C707	----	----
				Client sampling date / time	21-Oct-2018 14:26	21-Oct-2018 00:00	21-Oct-2018 00:00	----	----
Compound	CAS Number	LOR	Unit		EN1807084-006	EN1807084-007	EN1807084-008	--------	--------
					Result	Result	Result	----	----
USEPA Air Toxics Method TO15r - Continued									
1.3.5-Trimethylbenzene	108-67-8	0.0500	ppmv		<0.0500	<0.0500	----	----	----
1.2.4-Trimethylbenzene	95-63-6	0.0500	ppmv		<0.0500	<0.0500	----	----	----
1.3-Dichlorobenzene	541-73-1	0.0500	ppmv		<0.0500	<0.0500	----	----	----
Benzylchloride	100-44-7	0.0500	ppmv		<0.0500	<0.0500	----	----	----
1.4-Dichlorobenzene	106-46-7	0.0500	ppmv		<0.0500	<0.0500	----	----	----
1.2-Dichlorobenzene	95-50-1	0.0500	ppmv		<0.0500	<0.0500	----	----	----
1.2.4-Trichlorobenzene	120-82-1	0.0500	ppmv		<0.0500	<0.0500	----	----	----
Hexachlorobutadiene	87-68-3	0.0500	ppmv		<0.0500	<0.0500	----	----	----
Acetone	67-64-1	0.0500	ppmv		<0.0500	<0.0500	----	----	----
Bromodichloromethane	75-27-4	0.0500	ppmv		<0.0500	<0.0500	----	----	----
1.3-Butadiene	106-99-0	0.0500	ppmv		<0.0500	<0.0500	----	----	----
Carbon disulfide	75-15-0	0.0500	ppmv		<0.0500	<0.0500	----	----	----
1-Chloro-2-propene (Allyl chloride)	107-05-1	0.0500	ppmv		<0.0500	<0.0500	----	----	----
Cyclohexane	110-82-7	0.0500	ppmv		<0.0500	<0.0500	----	----	----
Dibromochloromethane	124-48-1	0.0500	ppmv		<0.0500	<0.0500	----	----	----
1.4-Dioxane	123-91-1	0.0500	ppmv		<0.0500	<0.0500	----	----	----
Ethylacetate	9002-89-5	0.0500	ppmv		<0.0500	<0.0500	----	----	----
trans-1.2-Dichloroethene	156-60-5	0.0500	ppmv		<0.0500	<0.0500	----	----	----
Heptane	142-82-5	0.0500	ppmv		<0.0500	<0.0500	----	----	----
Hexane	110-54-3	0.0500	ppmv		<0.0500	<0.0500	----	----	----
Isooctane	540-84-1	0.0500	ppmv		<0.0500	<0.0500	----	----	----
Isopropyl Alcohol	67-63-0	0.0500	ppmv		<0.0500	<0.0500	----	----	----
2-Butanone (MEK)	78-93-3	0.0500	ppmv		<0.0500	<0.0500	----	----	----
Methyl iso-Butyl ketone	108-10-1	0.0500	ppmv		<0.0500	<0.0500	----	----	----
2-Hexanone (MBK)	591-78-6	0.0500	ppmv		<0.0500	<0.0500	----	----	----
Propene	115-07-1	0.0500	ppmv		<0.0500	<0.0500	----	----	----
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.0500	ppmv		<0.0500	<0.0500	----	----	----
Tetrahydrofuran	109-99-9	0.0500	ppmv		<0.0500	<0.0500	----	----	----
Bromoform	75-25-2	0.0500	ppmv		<0.0500	<0.0500	----	----	----
Vinyl Acetate	108-05-4	0.0500	ppmv		<0.0500	<0.0500	----	----	----
Vinyl bromide	593-60-2	0.0500	ppmv		<0.0500	<0.0500	----	----	----
Naphthalene	91-20-3	0.0190	ppmv		<0.0190	<0.0190	----	----	----
USEPA Air Toxics Method TO15r Surrogates									

Analytical Results

Sub-Matrix: SOIL GAS (Matrix: AIR)				Client sample ID	SRT_BH417 C1102_S102	SRT_QC100 C1315_S121	Unused C707	----	----
				Client sampling date / time	21-Oct-2018 14:26	21-Oct-2018 00:00	21-Oct-2018 00:00	----	----
Compound	CAS Number	LOR	Unit		EN1807084-006	EN1807084-007	EN1807084-008	--------	--------
					Result	Result	Result	----	----
USEPA Air Toxics Method TO15r Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.5	%		**97.2**	**95.7**	**----**	**----**	**----**

Surrogate Control Limits

Sub-Matrix: **SOIL GAS**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
USEPA Air Toxics Method TO15r Surrogates			
4-Bromofluorobenzene	460-00-4	60	140

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EN1807084**	Page	: 1 of 7
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Newcastle
Contact	: MR BARRY HOUSTON	Contact	:
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: +61 02 9478 3900	Telephone	: +61 2 4014 2500
Project	: 1791865 SMW	Date Samples Received	: 24-Oct-2018
Order number	: PO14880	Date Analysis Commenced	: 26-Oct-2018
C-O-C number	: ----	Issue Date	: 31-Oct-2018
Sampler	: Philippe Koenig		
Site	: ----		
Quote number	: EN/002/18 National BQ		
No. of samples received	: 8		
No. of samples analysed	: 8		

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

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

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report ; Recovery and Acceptance Limits
- Matrix Spike (MS) and Matrix Spike Duplicate (MSD) 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*
Dale Semple	Analyst	Newcastle - Organics, Mayfield West, NSW
Dale Semple	Analyst	Newcastle, Mayfield West, NSW
Daniel Junek	Senior Air Analyst	Newcastle - Organics, Mayfield West, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **AIR**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP101: VOCs by USEPA Method TO15r (QC Lot: 2011156)									
EN1807084-001	SRT_BH408 C1319_S024	EP101-15X: Freon 12	75-71-8	0.5	ppbv	0.624 ppmv	646	3.46	0% - 50%
		EP101-15X: Chloromethane	74-87-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Freon 114	76-14-2	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Vinyl chloride	75-01-4	0.5	ppbv	<0.0020 ppmv	<2.0	0.00	No Limit
		EP101-15X: Bromomethane	74-83-9	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Chloroethane	75-00-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Freon 11	75-69-4	0.5	ppbv	0.199 ppmv	206	3.30	No Limit
		EP101-15X: 1.1-Dichloroethene	75-35-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Dichloromethane	75-09-2	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Freon 113	76-13-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: 1.1-Dichloroethane	75-34-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: cis-1.2-Dichloroethene	156-59-2	0.5	ppbv	<0.0050 ppmv	<5.0	0.00	No Limit
		EP101-15X: Chloroform	67-66-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: 1.2-Dichloroethane	107-06-2	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: 1.1.1-Trichloroethane	71-55-6	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Benzene	71-43-2	0.5	ppbv	<0.0300 ppmv	<30.0	0.00	No Limit
		EP101-15X: Carbon Tetrachloride	56-23-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: 1.2-Dichloropropane	78-87-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Trichloroethene	79-01-6	0.5	ppbv	0.0013 ppmv	1.4	0.00	No Limit
		EP101-15X: cis-1.3-Dichloropropylene	10061-01-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: trans-1.3-Dichloropropene	10061-02-6	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: 1.1.2-Trichloroethane	79-00-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Toluene	108-88-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: 1.2-Dibromoethane (EDB)	106-93-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Tetrachloroethene	127-18-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit

Sub-Matrix: **AIR**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP101: VOCs by USEPA Method TO15r (QC Lot: 2011156) - continued									
EN1807084-001	SRT_BH408 C1319_S024	EP101-15X: Chlorobenzene	108-90-7	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Ethylbenzene	100-41-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Styrene	100-42-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: ortho-Xylene	95-47-6	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: 4-Ethyltoluene	622-96-8	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: 1.3.5-Trimethylbenzene	108-67-8	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: 1.2.4-Trimethylbenzene	95-63-6	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: 1.3-Dichlorobenzene	541-73-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Benzylchloride	100-44-7	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: 1.4-Dichlorobenzene	106-46-7	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: 1.2-Dichlorobenzene	95-50-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: 1.2.4-Trichlorobenzene	120-82-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Hexachlorobutadiene	87-68-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Acetone	67-64-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Bromodichloromethane	75-27-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: 1.3-Butadiene	106-99-0	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Carbon disulfide	75-15-0	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: 1-Chloro-2-propene (Allyl chloride)	107-05-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Cyclohexane	110-82-7	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Dibromochloromethane	124-48-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: 1.4-Dioxane	123-91-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Ethylacetate	9002-89-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: trans-1.2-Dichloroethene	156-60-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Heptane	142-82-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Hexane	110-54-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Isooctane	540-84-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Isopropyl Alcohol	67-63-0	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: 2-Butanone (MEK)	78-93-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Methyl iso-Butyl ketone	108-10-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: 2-Hexanone (MBK)	591-78-6	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Propene	115-07-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Tetrahydrofuran	109-99-9	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Bromoform	75-25-2	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Vinyl Acetate	108-05-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Vinyl bromide	593-60-2	0.5	ppbv	<0.0500 ppmv	<50.0	0.00	No Limit
		EP101-15X: Naphthalene	91-20-3	0.5	ppbv	<0.0190 ppmv	<19.0	0.00	No Limit
		EP101-15X: meta- & para-Xylene	108-38-3 106-42-3	1	ppbv	<0.100 ppmv	<100	0.00	No Limit

Sub-Matrix: **AIR**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP103: Petroleum Hydrocarbons in Gaseous Samples (QC Lot: 2011164)									
EN1807084-001	SRT_BH408 C1319_S024	EP103-PC: C6 - C9 Fraction	----	50	ppbv	<5.00 ppmv	<5000	0.00	No Limit
		EP103-PC: C10 - C14 Fraction	----	50	ppbv	<5.00 ppmv	<5000	0.00	No Limit
EP103: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 2011164)									
EN1807084-001	SRT_BH408 C1319_S024	EP103-PC: C6 - C10 Fraction	C6_C10	50	ppbv	<5.00 ppmv	<5000	0.00	No Limit
		EP103-PC: >C10 - C16 Fraction	----	50	ppbv	<5.00 ppmv	<5000	0.00	No Limit
EP104: Permanent Gases (QC Lot: 2009247)									
EN1807084-001	SRT_BH408 C1319_S024	EP104: Carbon Monoxide	630-08-0	0.0005	Mol %	<0.0010	<0.0010	0.00	0% - 20%
		EP104: Carbon Dioxide	124-38-9	0.005	Mol %	0.728	0.740	1.65	0% - 20%
		EP104: Hydrogen	1333-74-0	0.005	Mol %	<0.010	<0.010	0.00	0% - 20%
		EP104: Helium	7440-59-7	0.005	Mol %	<0.010	<0.010	0.00	0% - 20%
		EP104: Oxygen	7782-44-7	0.1	Mol %	17.4	16.7	3.97	0% - 20%

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) 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 terms Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (DCS) refers to certified reference materials, or known interference free matrices spiked with target analytes. The purpose of these QC parameters are to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS and DCS.

Sub-Matrix: **AIR**

		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EP101: VOCs by USEPA Method TO15r (QCLot: 2011156)											
EP101-15X: Freon 12	75-71-8	0.5	ppbv	<0.5	10 ppbv	102	105	70	130	25	25
EP101-15X: Chloromethane	74-87-3	0.5	ppbv	<0.5	10 ppbv	95.4	97.7	70	130	25	25
EP101-15X: Freon 114	76-14-2	0.5	ppbv	<0.5	10 ppbv	103	107	77	130	25	25
EP101-15X: Vinyl chloride	75-01-4	0.5	ppbv	<0.5	10 ppbv	104	108	76	130	25	25
EP101-15X: Bromomethane	74-83-9	0.5	ppbv	<0.5	10 ppbv	102	108	76	130	25	25
EP101-15X: Chloroethane	75-00-3	0.5	ppbv	<0.5	10 ppbv	104	108	70	130	25	25
EP101-15X: Freon 11	75-69-4	0.5	ppbv	<0.5	10 ppbv	104	107	82	122	25	25
EP101-15X: 1.1-Dichloroethene	75-35-4	0.5	ppbv	<0.5	10 ppbv	102	106	77	121	25	25
EP101-15X: Dichloromethane	75-09-2	0.5	ppbv	<0.5	10 ppbv	87.8	92.2	70	130	25	25
EP101-15X: Freon 113	76-13-1	0.5	ppbv	<0.5	10 ppbv	99.5	103	78	118	25	25
EP101-15X: 1.1-Dichloroethane	75-34-3	0.5	ppbv	<0.5	10 ppbv	103	107	80	120	25	25
EP101-15X: cis-1.2-Dichloroethene	156-59-2	0.5	ppbv	<0.5	10 ppbv	106	109	80	114	25	25
EP101-15X: Chloroform	67-66-3	0.5	ppbv	<0.5	10 ppbv	101	105	83	118	25	25
EP101-15X: 1.2-Dichloroethane	107-06-2	0.5	ppbv	<0.5	10 ppbv	100.0	104	76	124	25	25
EP101-15X: 1.1.1-Trichloroethane	71-55-6	0.5	ppbv	<0.5	10 ppbv	103	104	84	117	25	25
EP101-15X: Benzene	71-43-2	0.5	ppbv	<0.5	10 ppbv	105	109	81	113	25	25
EP101-15X: Carbon Tetrachloride	56-23-5	0.5	ppbv	<0.5	10 ppbv	101	104	83	121	25	25
EP101-15X: 1.2-Dichloropropane	78-87-5	0.5	ppbv	<0.5	10 ppbv	102	105	80	120	25	25
EP101-15X: Trichloroethene	79-01-6	0.5	ppbv	<0.5	10 ppbv	99.9	103	84	116	25	25
EP101-15X: cis-1.3-Dichloropropylene	10061-01-5	0.5	ppbv	<0.5	10 ppbv	104	108	77	116	25	25
EP101-15X: trans-1.3-Dichloropropene	10061-02-6	0.5	ppbv	<0.5	10 ppbv	98.4	102	70	119	25	25
EP101-15X: 1.1.2-Trichloroethane	79-00-5	0.5	ppbv	<0.5	10 ppbv	103	106	84	123	25	25
EP101-15X: Toluene	108-88-3	0.5	ppbv	<0.5	10 ppbv	110	113	79	120	25	25
EP101-15X: 1.2-Dibromoethane (EDB)	106-93-4	0.5	ppbv	<0.5	10 ppbv	101	104	81	124	25	25
EP101-15X: Tetrachloroethene	127-18-4	0.5	ppbv	<0.5	10 ppbv	100	104	77	124	25	25
EP101-15X: Chlorobenzene	108-90-7	0.5	ppbv	<0.5	10 ppbv	97.7	101	81	122	25	25
EP101-15X: Ethylbenzene	100-41-4	0.5	ppbv	<0.5	10 ppbv	108	111	81	120	25	25
EP101-15X: meta- & para-Xylene	108-38-3 106-42-3	1	ppbv	<1.0	20 ppbv	106	109	80	125	25	25
EP101-15X: Styrene	100-42-5	0.5	ppbv	<0.5	10 ppbv	99.5	102	70	126	25	25
EP101-15X: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	ppbv	<0.5	10 ppbv	95.4	99.1	83	130	25	25
EP101-15X: ortho-Xylene	95-47-6	0.5	ppbv	<0.5	10 ppbv	105	108	82	122	25	25
EP101-15X: 4-Ethyltoluene	622-96-8	0.5	ppbv	<0.5	10 ppbv	110	111	70	128	25	25

Sub-Matrix: **AIR**

		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EP101: VOCs by USEPA Method TO15r (QCLot: 2011156) - continued											
EP101-15X: 1.3.5-Trimethylbenzene	108-67-8	0.5	ppbv	<0.5	10 ppbv	99.7	102	72	126	25	25
EP101-15X: 1.2.4-Trimethylbenzene	95-63-6	0.5	ppbv	<0.5	10 ppbv	98.5	101	70	130	25	25
EP101-15X: 1.3-Dichlorobenzene	541-73-1	0.5	ppbv	<0.5	10 ppbv	100.0	103	70	130	25	25
EP101-15X: Benzylchloride	100-44-7	0.5	ppbv	<0.5	10 ppbv	105	108	70	130	25	25
EP101-15X: 1.4-Dichlorobenzene	106-46-7	0.5	ppbv	<0.5	10 ppbv	98.8	102	70	130	25	25
EP101-15X: 1.2-Dichlorobenzene	95-50-1	0.5	ppbv	<0.5	10 ppbv	108	111	70	130	25	25
EP101-15X: 1.2.4-Trichlorobenzene	120-82-1	0.5	ppbv	<0.5	10 ppbv	122	126	70	130	25	25
EP101-15X: Hexachlorobutadiene	87-68-3	0.5	ppbv	<0.5	10 ppbv	120	124	70	130	25	25
EP101-15X: Acetone	67-64-1	0.5	ppbv	<0.5	10 ppbv	100	104	70	130	25	25
EP101-15X: Bromodichloromethane	75-27-4	0.5	ppbv	<0.5	10 ppbv	98.6	102	84	121	25	25
EP101-15X: 1.3-Butadiene	106-99-0	0.5	ppbv	<0.5	10 ppbv	107	111	73	130	25	25
EP101-15X: Carbon disulfide	75-15-0	0.5	ppbv	<0.5	10 ppbv	97.6	101	79	126	25	25
EP101-15X: 1-Chloro-2-propene (Allyl chloride)	107-05-1	0.5	ppbv	<0.5	10 ppbv	102	104	71	128	25	25
EP101-15X: Cyclohexane	110-82-7	0.5	ppbv	<0.5	10 ppbv	108	112	79	114	25	25
EP101-15X: Dibromochloromethane	124-48-1	0.5	ppbv	<0.5	10 ppbv	103	107	82	130	25	25
EP101-15X: 1.4-Dioxane	123-91-1	0.5	ppbv	<0.5	10 ppbv	100	103	70	122	25	25
EP101-15X: Ethylacetate	9002-89-5	0.5	ppbv	<0.5	10 ppbv	105	109	70	130	25	25
EP101-15X: trans-1.2-Dichloroethene	156-60-5	0.5	ppbv	<0.5	10 ppbv	102	106	77	123	25	25
EP101-15X: Heptane	142-82-5	0.5	ppbv	<0.5	10 ppbv	109	112	80	115	25	25
EP101-15X: Hexane	110-54-3	0.5	ppbv	<0.5	10 ppbv	103	105	77	120	25	25
EP101-15X: Isooctane	540-84-1	0.5	ppbv	<0.5	10 ppbv	105	108	72	127	25	25
EP101-15X: Isopropyl Alcohol	67-63-0	0.5	ppbv	<0.5	10 ppbv	105	110	70	129	25	25
EP101-15X: 2-Butanone (MEK)	78-93-3	0.5	ppbv	<0.5	10 ppbv	104	108	72	126	25	25
EP101-15X: Methyl iso-Butyl ketone	108-10-1	0.5	ppbv	<0.5	10 ppbv	103	107	74	130	25	25
EP101-15X: 2-Hexanone (MBK)	591-78-6	0.5	ppbv	<0.5	10 ppbv	99.4	103	70	130	25	25
EP101-15X: Propene	115-07-1	0.5	ppbv	<0.5	10 ppbv	93.0	97.2	70	130	25	25
EP101-15X: Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	ppbv	<0.5	10 ppbv	112	116	76	118	25	25
EP101-15X: Tetrahydrofuran	109-99-9	0.5	ppbv	<0.5	10 ppbv	102	107	71	127	25	25
EP101-15X: Bromoform	75-25-2	0.5	ppbv	<0.5	10 ppbv	104	108	74	130	25	25
EP101-15X: Vinyl Acetate	108-05-4	0.5	ppbv	<0.5	10 ppbv	103	107	70	122	25	25
EP101-15X: Vinyl bromide	593-60-2	0.5	ppbv	<0.5	10 ppbv	108	110	82	126	25	25
EP101-15X: Naphthalene	91-20-3	0.5	ppbv	<0.5	10 ppbv	125	130	70	130	25	25
EP103: Petroleum Hydrocarbons in Gaseous Samples (QCLot: 2011164)											
EP103-PC: C6 - C9 Fraction	----	50	ppbv	<50	2800 ppbv	100	95.4	70	130	25	25
EP103-PC: C10 - C14 Fraction	----	50	ppbv	<50	1200 ppbv	97.1	93.4	70	130	25	25
EP103: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 2011164)											
EP103-PC: C6 - C10 Fraction	C6_C10	50	ppbv	<50	3000 ppbv	97.5	93.2	70	130	25	25
EP103-PC: >C10 - C16 Fraction	----	50	ppbv	<50	500 ppbv	98.8	94.4	70	130	25	25
EP104: Permanent Gases (QCLot: 2009247)											

Sub-Matrix: **AIR**

		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EP104: Permanent Gases (QCLot: 2009247) - continued											
EP104: Carbon Dioxide	124-38-9	0.005	Mol %	<0.005	5.276 Mol %	104	103	90	110	25	25
EP104: Carbon Monoxide	630-08-0	0.0005	Mol %	<0.0005	----	----	----	----	----	----	----
EP104: Hydrogen	1333-74-0	0.005	Mol %	<0.005	0.105 Mol %	103	102	90	110	25	25
EP104: Helium	7440-59-7	0.005	Mol %	<0.005	0.105 Mol %	104	104	90	110	25	25
EP104: Oxygen	7782-44-7	0.1	Mol %	<0.10	9.304 Mol %	102	101	90	110	25	25

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EN1807084**	Page	: 1 of 4
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Newcastle
Contact	: MR BARRY HOUSTON	Telephone	: +61 2 4014 2500
Project	: 1791865 SMW	Date Samples Received	: 24-Oct-2018
Site	: ----	Issue Date	: 31-Oct-2018
Sampler	: Philippe Koenig	No. of samples received	: 8
Order number	: PO14880	No. of samples analysed	: 8

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

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

Analysis Holding Time Compliance

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

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

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

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

Matrix: **AIR**

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
EP103: Petroleum Hydrocarbons in Gaseous Samples							
Gas Canister - ALS Stainless Steel Silonite (EP103-PC)							
SRT_BH408 - C1319_S024, SRT_BH421 - C1098_S035, SRT_BH422 - C1296_S078, SRT_BH415 - C710_S121, SRT_BH416 - C1119_S112, SRT_BH417 - C1102_S102, SRT_QC100 - C1315_S121	**21-Oct-2018**	**----**	----	----	**31-Oct-2018**	20-Nov-2018	✓
EP103: Total Recoverable Hydrocarbons - NEPM 2013							
Gas Canister - ALS Stainless Steel Silonite (EP103-PC)							
SRT_BH408 - C1319_S024, SRT_BH421 - C1098_S035, SRT_BH422 - C1296_S078, SRT_BH415 - C710_S121, SRT_BH416 - C1119_S112, SRT_BH417 - C1102_S102, SRT_QC100 - C1315_S121	**21-Oct-2018**	**----**	----	----	**31-Oct-2018**	20-Nov-2018	✓
EP104: Permanent Gases							
Gas Canister - ALS Stainless Steel Silonite (EP104)							
SRT_BH408 - C1319_S024, SRT_BH421 - C1098_S035, SRT_BH422 - C1296_S078, SRT_BH415 - C710_S121, SRT_BH416 - C1119_S112, SRT_BH417 - C1102_S102, SRT_QC100 - C1315_S121	**21-Oct-2018**	**----**	----	----	**30-Oct-2018**	20-Nov-2018	✓
Sampling Quality Assurance							
Gas Canister - ALS Stainless Steel Silonite (CAN-001)							
SRT_BH408 - C1319_S024, SRT_BH421 - C1098_S035, SRT_BH422 - C1296_S078, SRT_BH415 - C710_S121, SRT_BH416 - C1119_S112, SRT_BH417 - C1102_S102, SRT_QC100 - C1315_S121, Unused - C707	**21-Oct-2018**	**----**	----	----	**26-Oct-2018**	21-Oct-2019	✓
USEPA Air Toxics Method TO15r							
Gas Canister - ALS Stainless Steel Silonite (EP101-15X)							
SRT_BH408 - C1319_S024, SRT_BH421 - C1098_S035, SRT_BH422 - C1296_S078, SRT_BH415 - C710_S121, SRT_BH416 - C1119_S112, SRT_BH417 - C1102_S102, SRT_QC100 - C1315_S121	**21-Oct-2018**	**----**	----	----	**31-Oct-2018**	20-Nov-2018	✓

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: **AIR**

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*	
Duplicate Control Samples (DCS)							
Permanent Gases and Light Hydrocarbons	EP104	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
VOCs in Air by USEPA TO15r - Extended Suite	EP101-15X	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile TPH/TRH in Gaseous Samples	EP103-PC	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Duplicates (DUP)							
Permanent Gases and Light Hydrocarbons	EP104	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
VOCs in Air by USEPA TO15r - Extended Suite	EP101-15X	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile TPH/TRH in Gaseous Samples	EP103-PC	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Permanent Gases and Light Hydrocarbons	EP104	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
VOCs in Air by USEPA TO15r - Extended Suite	EP101-15X	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile TPH/TRH in Gaseous Samples	EP103-PC	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Permanent Gases and Light Hydrocarbons	EP104	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
VOCs in Air by USEPA TO15r - Extended Suite	EP101-15X	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile TPH/TRH in Gaseous Samples	EP103-PC	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Canister Sampling - Field Data	CAN-001	AIR	In house: Referenced to USEPA TO14 / TO15
VOCs in Air by USEPA TO15r - Extended Suite	EP101-15X	AIR	In house: Referenced to USEPA TO15r Volatile Organic Compounds in Air by USEPA TO15. Extended Suite
VOCs in Air by USEPA TO15r - Extended Suite (mass/volume)	EP101-15X-MV	AIR	In house: Referenced to USEPA TO15r Volatile Organic Compounds in Air by USEPA TO15. Extended Suite (Calculated Concentration)
Volatile TPH/TRH in Gaseous Samples	EP103-PC	AIR	Volatile TPH/TRH by GC-MS with Preconcentration and Thermal Desorption Injection Based on USEPA TO15, MassDEP APH (Rev1 2009) and TPH/NEPM Fractions (2013)
Volatile TPH/TRH in Gaseous Samples (Calc Conc)	EP103-PC-MV	AIR	Volatile TPH/TRH by GC-MS with Preconcentration and Thermal Desorption Injection Based on USEPA TO15, MassDEP APH (Rev1 2009) and TPH/NEPM Fractions (2013) Calculated from ppbv results based on given Temperature and Atmospheric Pressure and mid-range molecular weights
Permanent Gases and Light Hydrocarbons	EP104	AIR	Hydrocarbons, Carbon Dioxide and Carbon Monoxide by GC-FID-TCD. Gases by GC-TCD In house: Referenced to ASTM D1945 applied to Gases and Light Hydrocarbons (C1-C4) using capillary GC
Permanent Gases and Light Hydrocarbons (mass/volume)	EP104-MV	AIR	Permanent Gases and Light Hydrocarbons - Calculated as mass/volume concentration from percentage composition and given termperature and pressure.

CHAIN OF CUSTODY & ANALYSIS REQUEST (COC02)

Envirolab
12 Ashley Street, Chatswood,
NSW 2067
T +61 2 9910 6200

Lab ID Number: 202499 *(please quote on correspondence)*

Site: 1791865

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:			

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	ANALYSIS REQUESTED: HOLD	HOLD (FREEZE FOR ASS)	(TRH / BTEXN / PAH / 8 Metals)	OCPs / OPPs	VOCs	PCBs	Total Phenols	asbestos – absence / presence)	Additional Report Formats / Notes/Guidelines/LOR/ Special instructions
1	QCB100	6/10/2018	x			1	x								
2	QCB101	6/10/2018	x			1			X	X	X	X	X	X	Asbestos if possible
3	QCB102	6/10/2018	x			1			X						
4	QCB103	7/10/2018	x			1			X						

Additional Report Formats:
- ☐ NEPM
  - ✓CSV
  - ✓ESDAT
- ☐ DQO
- ☐ GO, Guidelines ---------
- ☐ Others _____

Relinquished By: Tegen Anning	Date/Time: 08/10/2018	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10.10.2018 – primary reviewed)

CHAIN OF CUSTODY & ANALYSIS REQUEST

Page _1_ of __1__

Envirolab
12 Ashley Street, Chatswood,
NSW 2067
T +61 2 9910 6200

Lab ID Number: *(please quote on correspondence)*

Site: Waterloo Station

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway St Leonards NSW	Purchase Order No: Results Required Date:	 5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:			

LAB ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	EA200 (asbestos – absence / presence)	EA200N (asbestos NEPM)	EILs (pH / CEC \ clay content)	EA037 (ASS Field Screen)	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)
1	QCB100	6/10/2018	x			1	x												
2	QCB101	6/10/2018	x			1	x												
3	QCB102	6/10/2018	x			1	x												
4	QCB103	7/10/2018	x			1	x												

ANALYSIS REQUESTED

Additional Report Formats

NEPM
CSV
ESDAT
DQO
GO, Guidelines _____
Others _____

Notes/Guidelines/LOR/ Special instructions

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 202499
Date Received: 8/10/2018
Time Received: 16:00
Received By: RL
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished By: T. Anning	Date/Time: 8/10/18	Received By: Play ES	Date/Time: 8/10/2018 1600
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (date)

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Golder Associates Pty Ltd
Attention	Barry Houston

Sample Login Details

Your reference	Sydney Metro
Envirolab Reference	202499
Date Sample Received	08/10/2018
Date Instructions Received	08/10/2018
Date Results Expected to be Reported	On Hold

Sample Condition

Samples received in appropriate condition for analysis	YES
No. of Samples Provided	4 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	9.2
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	VOCs in soil	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	SVOCs in Soil	On Hold
QCB100						✓
QCB101						✓
QCB102						✓
QCB103						✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 202499

Client Details

Client	Golder Associates Pty Ltd
Attention	Barry Houston
Address	124 Pacific Highway, St Leonards, NSW, 2065

Sample Details

Your Reference	**Sydney Metro**
Number of Samples	4 Soil
Date samples received	08/10/2018
Date completed instructions received	10/10/2018

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	17/10/2018
Date of Issue	17/10/2018

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Asbestos Approved By
Analysed by Asbestos Approved Identifier: Aida Marner
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Jeremy Faircloth, Organics Supervisor
Leon Ow, Chemist
Lucy Zhu, Asbsestos Analyst
Nick Sarlamis, Inorganics Supervisor
Steven Luong, Senior Chemist

Authorised By



Jacinta Hurst, Laboratory Manager

VOCs in soil		
Our Reference		202499-2
Your Reference	UNITS	QCB101
Date Sampled		06/10/2018
Type of sample		Soil
Date extracted	-	12/10/2018
Date analysed	-	15/10/2018
Dichlorodifluoromethane	mg/kg	<1
Chloromethane	mg/kg	<1
Vinyl Chloride	mg/kg	<1
Bromomethane	mg/kg	<1
Chloroethane	mg/kg	<1
Trichlorofluoromethane	mg/kg	<1
1,1-Dichloroethene	mg/kg	<1
trans-1,2-dichloroethene	mg/kg	<1
1,1-dichloroethane	mg/kg	<1
cis-1,2-dichloroethene	mg/kg	<1
bromochloromethane	mg/kg	<1
chloroform	mg/kg	<1
2,2-dichloropropane	mg/kg	<1
1,2-dichloroethane	mg/kg	<1
1,1,1-trichloroethane	mg/kg	<1
1,1-dichloropropene	mg/kg	<1
Cyclohexane	mg/kg	<1
carbon tetrachloride	mg/kg	<1
Benzene	mg/kg	<0.2
dibromomethane	mg/kg	<1
1,2-dichloropropane	mg/kg	<1
trichloroethene	mg/kg	<1
bromodichloromethane	mg/kg	<1
trans-1,3-dichloropropene	mg/kg	<1
cis-1,3-dichloropropene	mg/kg	<1
1,1,2-trichloroethane	mg/kg	<1
Toluene	mg/kg	<0.5
1,3-dichloropropane	mg/kg	<1
dibromochloromethane	mg/kg	<1
1,2-dibromoethane	mg/kg	<1
tetrachloroethene	mg/kg	<1
1,1,1,2-tetrachloroethane	mg/kg	<1
chlorobenzene	mg/kg	<1
Ethylbenzene	mg/kg	<1
bromoform	mg/kg	<1

VOCs in soil		
Our Reference		202499-2
Your Reference	UNITS	QCB101
Date Sampled		06/10/2018
Type of sample		Soil
m+p-xylene	mg/kg	<2
styrene	mg/kg	<1
1,1,2,2-tetrachloroethane	mg/kg	<1
o-Xylene	mg/kg	<1
1,2,3-trichloropropane	mg/kg	<1
isopropylbenzene	mg/kg	<1
bromobenzene	mg/kg	<1
n-propyl benzene	mg/kg	<1
2-chlorotoluene	mg/kg	<1
4-chlorotoluene	mg/kg	<1
1,3,5-trimethyl benzene	mg/kg	<1
tert-butyl benzene	mg/kg	<1
1,2,4-trimethyl benzene	mg/kg	<1
1,3-dichlorobenzene	mg/kg	<1
sec-butyl benzene	mg/kg	<1
1,4-dichlorobenzene	mg/kg	<1
4-isopropyl toluene	mg/kg	<1
1,2-dichlorobenzene	mg/kg	<1
n-butyl benzene	mg/kg	<1
1,2-dibromo-3-chloropropane	mg/kg	<1
1,2,4-trichlorobenzene	mg/kg	<1
hexachlorobutadiene	mg/kg	<1
1,2,3-trichlorobenzene	mg/kg	<1
Surrogate Dibromofluorometha	%	107
Surrogate aaa-Trifluorotoluene	%	78
Surrogate Toluene-d_8	%	98
Surrogate 4-Bromofluorobenzene	%	94

vTRH(C6-C10)/BTEXN in Soil				
Our Reference	UNITS	202499-2	202499-3	202499-4
Your Reference		QCB101	QCB102	QCB103
Date Sampled		06/10/2018	06/10/2018	07/10/2018
Type of sample		Soil	Soil	Soil
Date extracted	-	12/10/2018	12/10/2018	12/10/2018
Date analysed	-	15/10/2018	15/10/2018	15/10/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	78	81	92

svTRH (C10-C40) in Soil				
Our Reference		202499-2	202499-3	202499-4
Your Reference	UNITS	QCB101	QCB102	QCB103
Date Sampled		06/10/2018	06/10/2018	07/10/2018
Type of sample		Soil	Soil	Soil
Date extracted	-	12/10/2018	12/10/2018	12/10/2018
Date analysed	-	17/10/2018	17/10/2018	17/10/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	170	<100
TRH C_{29} - C_{36}	mg/kg	<100	170	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	270	<100
TRH >C_{34} -C_{40}	mg/kg	<100	190	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	470	<50
Surrogate o-Terphenyl	%	77	84	69

PAHs in Soil				
Our Reference		202499-2	202499-3	202499-4
Your Reference	UNITS	QCB101	QCB102	QCB103
Date Sampled		06/10/2018	06/10/2018	07/10/2018
Type of sample		Soil	Soil	Soil
Date extracted	-	12/10/2018	12/10/2018	12/10/2018
Date analysed	-	15/10/2018	15/10/2018	15/10/2018
Naphthalene	mg/kg	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	0.1	<0.1
Fluorene	mg/kg	<0.1	0.2	<0.1
Phenanthrene	mg/kg	<0.1	1.6	<0.1
Anthracene	mg/kg	<0.1	0.3	<0.1
Fluoranthene	mg/kg	<0.1	2.1	0.1
Pyrene	mg/kg	<0.1	2.0	0.1
Benzo(a)anthracene	mg/kg	<0.1	0.9	<0.1
Chrysene	mg/kg	<0.1	0.9	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	1	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.85	0.06
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.4	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.5	<0.1
Total +ve PAH's	mg/kg	<0.05	11	0.3
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	1.1	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	1.2	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	1.2	<0.5
Surrogate p-Terphenyl-d14	%	92	93	93

Organochlorine Pesticides in soil		
Our Reference		202499-2
Your Reference	UNITS	QCB101
Date Sampled		06/10/2018
Type of sample		Soil
Date extracted	-	12/10/2018
Date analysed	-	12/10/2018
HCB	mg/kg	<0.1
alpha-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Surrogate TCMX	%	87

Organophosphorus Pesticides		
Our Reference		202499-2
Your Reference	UNITS	QCB101
Date Sampled		06/10/2018
Type of sample		Soil
Date extracted	-	12/10/2018
Date analysed	-	12/10/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Chlorpyriphos	mg/kg	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Dichlorvos	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Ethion	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Parathion	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Surrogate TCMX	%	87

PCBs in Soil		
Our Reference		202499-2
Your Reference	UNITS	QCB101
Date Sampled		06/10/2018
Type of sample		Soil
Date extracted	-	12/10/2018
Date analysed	-	12/10/2018
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate TCLMX	%	87

Acid Extractable metals in soil				
Our Reference	UNITS	202499-2	202499-3	202499-4
Your Reference		QCB101	QCB102	QCB103
Date Sampled		06/10/2018	06/10/2018	07/10/2018
Type of sample		Soil	Soil	Soil
Date prepared	-	12/10/2018	12/10/2018	12/10/2018
Date analysed	-	12/10/2018	12/10/2018	12/10/2018
Arsenic	mg/kg	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	<1	10	<1
Copper	mg/kg	4	28	1
Lead	mg/kg	8	16	7
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	8	<1
Zinc	mg/kg	16	36	12

Misc Soil - Inorg		
Our Reference		202499-2
Your Reference	UNITS	QCB101
Date Sampled		06/10/2018
Type of sample		Soil
Date prepared	-	12/10/2018
Date analysed	-	12/10/2018
Total Phenolics (as Phenol)	mg/kg	<5

Moisture				
Our Reference		202499-2	202499-3	202499-4
Your Reference	UNITS	QCB101	QCB102	QCB103
Date Sampled		06/10/2018	06/10/2018	07/10/2018
Type of sample		Soil	Soil	Soil
Date prepared	-	12/10/2018	12/10/2018	12/10/2018
Date analysed	-	15/10/2018	15/10/2018	15/10/2018
Moisture	%	3.3	2.1	5.3

Asbestos ID - soils		
Our Reference		202499-2
Your Reference	UNITS	QCB101
Date Sampled		06/10/2018
Type of sample		Soil
Date analysed	-	15/10/2018
Sample mass tested	g	Approx. 25g
Sample Description	-	Beige sandy soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.

Method ID	Methodology Summary
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	202499-2
Date extracted	-			12/10/2018	2	12/10/2018	12/10/2018		12/10/2018	12/10/2018
Date analysed	-			15/10/2018	2	15/10/2018	15/10/2018		15/10/2018	15/10/2018
Dichlorodifluoromethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Chloromethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Vinyl Chloride	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Bromomethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Chloroethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Trichlorofluoromethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,1-Dichloroethene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
trans-1,2-dichloroethene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,1-dichloroethane	mg/kg	1	Org-014	<1	2	<1	<1	0	95	100
cis-1,2-dichloroethene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
bromochloromethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
chloroform	mg/kg	1	Org-014	<1	2	<1	<1	0	90	94
2,2-dichloropropane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,2-dichloroethane	mg/kg	1	Org-014	<1	2	<1	<1	0	85	90
1,1,1-trichloroethane	mg/kg	1	Org-014	<1	2	<1	<1	0	93	99
1,1-dichloropropene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Cyclohexane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
carbon tetrachloride	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-014	<0.2	2	<0.2	<0.2	0	[NT]	[NT]
dibromomethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,2-dichloropropane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
trichloroethene	mg/kg	1	Org-014	<1	2	<1	<1	0	76	81
bromodichloromethane	mg/kg	1	Org-014	<1	2	<1	<1	0	97	103
trans-1,3-dichloropropene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
cis-1,3-dichloropropene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,1,2-trichloroethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-014	<0.5	2	<0.5	<0.5	0	[NT]	[NT]
1,3-dichloropropane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
dibromochloromethane	mg/kg	1	Org-014	<1	2	<1	<1	0	94	100
1,2-dibromoethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
tetrachloroethene	mg/kg	1	Org-014	<1	2	<1	<1	0	80	86
1,1,1,2-tetrachloroethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
chlorobenzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
bromoform	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-014	<2	2	<2	<2	0	[NT]	[NT]
styrene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	202499-2
1,2,3-trichloropropane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
isopropylbenzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
bromobenzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
n-propyl benzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
2-chlorotoluene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
4-chlorotoluene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,3,5-trimethyl benzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
tert-butyl benzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,2,4-trimethyl benzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,3-dichlorobenzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
sec-butyl benzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,4-dichlorobenzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
4-isopropyl toluene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,2-dichlorobenzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
n-butyl benzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,2-dibromo-3-chloropropane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,2,4-trichlorobenzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
hexachlorobutadiene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,2,3-trichlorobenzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluorometha	%		Org-014	105	2	107	78	31	105	106
Surrogate aaa-Trifluorotoluene	%		Org-014	83	2	78	77	1	79	82
Surrogate Toluene-d_8	%		Org-014	96	2	98	100	2	99	99
Surrogate 4-Bromofluorobenzene	%		Org-014	96	2	94	87	8	96	94

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	202499-2
Date extracted	-			12/10/2018	2	12/10/2018	12/10/2018		12/10/2018	12/10/2018
Date analysed	-			15/10/2018	2	15/10/2018	15/10/2018		15/10/2018	15/10/2018
TRH C_6 - C_9	mg/kg	25	Org-016	<25	2	<25	<25	0	103	86
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	2	<25	<25	0	103	86
Benzene	mg/kg	0.2	Org-016	<0.2	2	<0.2	<0.2	0	118	92
Toluene	mg/kg	0.5	Org-016	<0.5	2	<0.5	<0.5	0	100	79
Ethylbenzene	mg/kg	1	Org-016	<1	2	<1	<1	0	99	84
m+p-xylene	mg/kg	2	Org-016	<2	2	<2	<2	0	100	88
o-Xylene	mg/kg	1	Org-016	<1	2	<1	<1	0	95	88
naphthalene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	83	2	78	77	1	105	82

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Date analysed	-			17/10/2018	[NT]	[NT]	[NT]	[NT]	17/10/2018	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	115	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	117	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	115	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	117	[NT]
Surrogate o-Terphenyl	%		Org-003	115	[NT]	[NT]	[NT]	[NT]	128	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Date analysed	-			15/10/2018	[NT]	[NT]	[NT]	[NT]	15/10/2018	[NT]
Naphthalene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	120	[NT]
Phenanthrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	[NT]	[NT]	[NT]	[NT]	107	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	87	[NT]	[NT]	[NT]	[NT]	96	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Date analysed	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	97	[NT]
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	81	[NT]
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	83	[NT]
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-005	91	[NT]	[NT]	[NT]	[NT]	105	[NT]

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Date analysed	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	85	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Dimethoate	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Fenitrothion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Malathion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	81	[NT]
Parathion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Ronnel	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	87	[NT]
Surrogate TCMX	%		Org-008	91	[NT]	[NT]	[NT]	[NT]	87	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Date analysed	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCLMX	%		Org-006	91	[NT]	[NT]	[NT]	[NT]	87	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date prepared	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Date analysed	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	106	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	97	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]

QUALITY CONTROL: Misc Soil - Inorg					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Date analysed	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	[NT]	[NT]	[NT]	[NT]	101	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Report Comments

Asbestos: A portion of the supplied sample was sub-sampled for asbestos analysis according to Envirolab procedures.
We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g of sample in its own container.
Note: Sample 202499-2 was sub-sampled from a jar provided by the client.

CHAIN OF CUSTODY & ANALYSIS REQUEST (COC03)

Page _1_ of __1__

Envirolab
12 Ashley Street, Chatswood,
NSW 2067
T +61 2 9910 6200

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 / Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:			

Lab ID Number: *(please quote on correspondence)*

Site: 1791865

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	(TRH / BTEXN / PAH / 8 Metals)	OCPs / OPPs	VOCs	PCBs	Total Phenols	asbestos – absence / presence)
	QCB104 (1)	18/10/2018	x			1			X		X			

ANALYSIS REQUESTED

Additional Report Formats

NEPM
☑ CSV
☑ ESDAT
DQO
GO, Guidelines --------
Others _____

Notes/Guidelines/LOR/ Special instructions

Asbestos if possible

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 203393
Date Received: 18/10/2018
Time Received: 14.45
Received By:
Temp: Cool/Ambient 1-6
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished By: ~~Tegen Anning~~	Date/Time: 08/10/2018	Received By: Play	Date/Time: 18/10/2018 14.45
Relinquished By: B. Houston	Date/Time: 18/10/18	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10.10.2018 – primary reviewed)

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Golder Associates Pty Ltd
Attention	Rita Bonetti, B Houston

Sample Login Details

Your reference	Sydney Metro
Envirolab Reference	203393
Date Sample Received	18/10/2018
Date Instructions Received	18/10/2018
Date Results Expected to be Reported	25/10/2018

Sample Condition

Samples received in appropriate condition for analysis	YES
No. of Samples Provided	1 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	1.6
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	VOCs in soil	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Acid Extractable metalsin soil	Asbestos ID - soils
QCB104	✓	✓	✓	✓	✓	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.

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12 Ashley St Chatswood NSW 2067
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customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 203393

Client Details

Client	Golder Associates Pty Ltd
Attention	Rita Bonetti, B Houston
Address	124 Pacific Highway, St Leonards, NSW, 2065

Sample Details

Your Reference	**Sydney Metro**
Number of Samples	1 Soil
Date samples received	18/10/2018
Date completed instructions received	18/10/2018

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	25/10/2018
Date of Issue	23/10/2018

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Asbestos Approved By
Analysed by Asbestos Approved Identifier: Aida Marner
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Jeremy Faircloth, Organics Supervisor
Leon Ow, Chemist
Matthew Tang, Asbsestos Analyst
Steven Luong, Senior Chemist

Authorised By



Jacinta Hurst, Laboratory Manager

VOCs in soil		
Our Reference		203393-1
Your Reference	UNITS	QCB104
Date Sampled		13/10/2018
Type of sample		Soil
Date extracted	-	19/10/2018
Date analysed	-	22/10/2018
Dichlorodifluoromethane	mg/kg	<1
Chloromethane	mg/kg	<1
Vinyl Chloride	mg/kg	<1
Bromomethane	mg/kg	<1
Chloroethane	mg/kg	<1
Trichlorofluoromethane	mg/kg	<1
1,1-Dichloroethene	mg/kg	<1
trans-1,2-dichloroethene	mg/kg	<1
1,1-dichloroethane	mg/kg	<1
cis-1,2-dichloroethene	mg/kg	<1
bromochloromethane	mg/kg	<1
chloroform	mg/kg	<1
2,2-dichloropropane	mg/kg	<1
1,2-dichloroethane	mg/kg	<1
1,1,1-trichloroethane	mg/kg	<1
1,1-dichloropropene	mg/kg	<1
Cyclohexane	mg/kg	<1
carbon tetrachloride	mg/kg	<1
Benzene	mg/kg	<0.2
dibromomethane	mg/kg	<1
1,2-dichloropropane	mg/kg	<1
trichloroethene	mg/kg	<1
bromodichloromethane	mg/kg	<1
trans-1,3-dichloropropene	mg/kg	<1
cis-1,3-dichloropropene	mg/kg	<1
1,1,2-trichloroethane	mg/kg	<1
Toluene	mg/kg	<0.5
1,3-dichloropropane	mg/kg	<1
dibromochloromethane	mg/kg	<1
1,2-dibromoethane	mg/kg	<1
tetrachloroethene	mg/kg	<1
1,1,1,2-tetrachloroethane	mg/kg	<1
chlorobenzene	mg/kg	<1
Ethylbenzene	mg/kg	<1
bromoform	mg/kg	<1

VOCs in soil		
Our Reference		203393-1
Your Reference	UNITS	QCB104
Date Sampled		13/10/2018
Type of sample		Soil
m+p-xylene	mg/kg	<2
styrene	mg/kg	<1
1,1,2,2-tetrachloroethane	mg/kg	<1
o-Xylene	mg/kg	<1
1,2,3-trichloropropane	mg/kg	<1
isopropylbenzene	mg/kg	<1
bromobenzene	mg/kg	<1
n-propyl benzene	mg/kg	<1
2-chlorotoluene	mg/kg	<1
4-chlorotoluene	mg/kg	<1
1,3,5-trimethyl benzene	mg/kg	<1
tert-butyl benzene	mg/kg	<1
1,2,4-trimethyl benzene	mg/kg	<1
1,3-dichlorobenzene	mg/kg	<1
sec-butyl benzene	mg/kg	<1
1,4-dichlorobenzene	mg/kg	<1
4-isopropyl toluene	mg/kg	<1
1,2-dichlorobenzene	mg/kg	<1
n-butyl benzene	mg/kg	<1
1,2-dibromo-3-chloropropane	mg/kg	<1
1,2,4-trichlorobenzene	mg/kg	<1
hexachlorobutadiene	mg/kg	<1
1,2,3-trichlorobenzene	mg/kg	<1
Surrogate Dibromofluorometha	%	107
Surrogate aaa-Trifluorotoluene	%	72
Surrogate Toluene-d_8	%	97
Surrogate 4-Bromofluorobenzene	%	96

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		203393-1
Your Reference	UNITS	QCB104
Date Sampled		13/10/2018
Type of sample		Soil
Date extracted	-	19/10/2018
Date analysed	-	22/10/2018
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	72

svTRH (C10-C40) in Soil		
Our Reference		203393-1
Your Reference	UNITS	QCB104
Date Sampled		13/10/2018
Type of sample		Soil
Date extracted	-	19/10/2018
Date analysed	-	20/10/2018
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	<100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	83

PAHs in Soil		
Our Reference		203393-1
Your Reference	UNITS	QCB104
Date Sampled		13/10/2018
Type of sample		Soil
Date extracted	-	19/10/2018
Date analysed	-	22/10/2018
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	0.2
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	0.3
Pyrene	mg/kg	0.3
Benzo(a)anthracene	mg/kg	0.2
Chrysene	mg/kg	0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	0.1
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	1.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5
Surrogate p-Terphenyl-d14	%	105

Acid Extractable metals in soil		
Our Reference		203393-1
Your Reference	UNITS	QCB104
Date Sampled		13/10/2018
Type of sample		Soil
Date prepared	-	19/10/2018
Date analysed	-	19/10/2018
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.4
Chromium	mg/kg	10
Copper	mg/kg	40
Lead	mg/kg	20
Mercury	mg/kg	0.1
Nickel	mg/kg	5
Zinc	mg/kg	63

Moisture		
Our Reference		203393-1
Your Reference	UNITS	QCB104
Date Sampled		13/10/2018
Type of sample		Soil
Date prepared	-	19/10/2018
Date analysed	-	22/10/2018
Moisture	%	12

Asbestos ID - soils		
Our Reference		203393-1
Your Reference	UNITS	QCB104
Date Sampled		13/10/2018
Type of sample		Soil
Date analysed	-	22/10/2018
Sample mass tested	g	Approx. 35g
Sample Description	-	Grey coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: VOCs in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			19/10/2018	[NT]	[NT]	[NT]	[NT]	19/10/2018	[NT]
Date analysed	-			22/10/2018	[NT]	[NT]	[NT]	[NT]	22/10/2018	[NT]
Dichlorodifluoromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Vinyl Chloride	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromomethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichlorofluoromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-Dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
trans-1,2-dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-dichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
cis-1,2-dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
bromochloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
chloroform	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
2,2-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
1,1,1-trichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
1,1-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Cyclohexane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
carbon tetrachloride	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzene	mg/kg	0.2	Org-014	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
dibromomethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
trichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	91	[NT]
bromodichloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
trans-1,3-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
cis-1,3-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2-trichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Toluene	mg/kg	0.5	Org-014	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
dibromochloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
1,2-dibromoethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
tetrachloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	90	[NT]
1,1,1,2-tetrachloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
chlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
bromoform	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-014	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
styrene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
o-Xylene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

QUALITY CONTROL: VOCs in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
1,2,3-trichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
isopropylbenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
bromobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-propyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-chlorotoluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-chlorotoluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3,5-trimethyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
tert-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trimethyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
sec-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,4-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-isopropyl toluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dibromo-3-chloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
hexachlorobutadiene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluorometha	%		Org-014	108	[NT]	[NT]	[NT]	[NT]	107	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-014	90	[NT]	[NT]	[NT]	[NT]	89	[NT]
Surrogate Toluene-d_8	%		Org-014	98	[NT]	[NT]	[NT]	[NT]	99	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-014	92	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			19/10/2018	[NT]	[NT]	[NT]	[NT]	19/10/2018	[NT]
Date analysed	-			22/10/2018	[NT]	[NT]	[NT]	[NT]	22/10/2018	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	89	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	89	[NT]
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	[NT]	[NT]	93	[NT]
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	[NT]	[NT]	81	[NT]
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	88	[NT]
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	[NT]	[NT]	91	[NT]
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	90	[NT]
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	90	[NT]	[NT]	[NT]	[NT]	89	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			19/10/2018	[NT]	[NT]	[NT]	[NT]	19/10/2018	[NT]
Date analysed	-			20/10/2018	[NT]	[NT]	[NT]	[NT]	20/10/2018	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	87	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	79	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	73	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	87	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	79	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	73	[NT]
Surrogate o-Terphenyl	%		Org-003	85	[NT]	[NT]	[NT]	[NT]	90	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			19/10/2018	[NT]	[NT]	[NT]	[NT]	19/10/2018	[NT]
Date analysed	-			22/10/2018	[NT]	[NT]	[NT]	[NT]	22/10/2018	[NT]
Naphthalene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Phenanthrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	121	[NT]
Anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	85	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	[NT]	[NT]	[NT]	[NT]	129	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	94	[NT]	[NT]	[NT]	[NT]	104	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			19/10/2018	[NT]	[NT]	[NT]	[NT]	19/10/2018	[NT]
Date analysed	-			19/10/2018	[NT]	[NT]	[NT]	[NT]	19/10/2018	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	110	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	103	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	115	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	107	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	107	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Report Comments

Asbestos: A portion of the supplied sample was sub-sampled for asbestos analysis according to Envirolab procedures.
We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying
40-50g of sample in its own container.
Note: Sample 203393-1 was sub-sampled from a jar provided by the client.

CHAIN OF CUSTODY & ANALYSIS REQUEST (COC05)

Page _1_ of __1__

Envirolab
12 Ashley Street, Chatswood,
NSW 2067
T +61 2 9910 6200

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:			

Lab ID Number: *(please quote on correspondence)*

Site: 1791865

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other ___	NO. OF CONTAINERS	ANALYSIS REQUESTED: HOLD	HOLD (FREEZE FOR ASS)	(TRH / BTEXN / PAH / 8 Metals)	OCPs / OPPs	VOCs	PCBs	Total Phenols	asbestos – absence / presence)					Notes/Guidelines/LOR/ Special instructions
	QCB106	20/10/2018	x			1			X	x	X	x	x						
																			#203759

Additional Report Formats

- ☐ NEPM
  - ✓CSV
  - ✓ESDAT
- ☐ DQO
- ☐ GO, Guidelines ---------
- ☐ Others _____

Relinquished By: Rita Bonneti	Date/Time: 22/10/2018	Received By: ELS Souraya	Date/Time: 231018 1550.
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10.10.2018 – primary reviewed)

Analysis Recd 251018 1450 Gwd

CHAIN OF CUSTODY & ANALYSIS REQUEST (COC02)

Envirolab
12 Ashley Street, Chatswood,
NSW 2067
T +61 2 9910 6200

Lab ID Number: *(please quote on correspondence)*

Site: 1791865

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro		
Address:	124 Pacific Highway	Purchase Order No:			
	St Leonards NSW	Results Required Date:	5 day TAT		
		Telephone:	0437 039 929	Fax:	
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au		
Quotation No:					

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	(TRH / BTEXN / PAH / 8 Metals)	OCPs / OPPs	VOCs	PCBs	Total Phenols	asbestos – absence / presence)	
1	SRT-QCB106	20/10/2018	x			1									

ANALYSIS REQUESTED

Additional Report Formats

NEPM
☑ CSV
☑ ESDAT
DQO
GO, Guidelines ---------
Others _____

Notes/Guidelines/LOR/ Special instructions

ENVIROLAB

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 203759
Date Received: 23/10/18
Time Received: 1550
Received By: S.J
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished By:	Date/Time: 23/10/2018	Received By: ELS / Sourayh	Date/Time: 23/10/18 1550
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10.10.2018 – primary reviewed)

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Golder Associates Pty Ltd
Attention	Rita Bonetti, B Houston

Sample Login Details

Your reference	Sydney Metro
Envirolab Reference	203759
Date Sample Received	23/10/2018
Date Instructions Received	23/10/2018
Date Results Expected to be Reported	On Hold

Sample Condition

Samples received in appropriate condition for analysis	YES
No. of Samples Provided	1 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	11.2
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	VOCs in soil	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Acid Extractable metalsin soil	Asbestos ID - soils	On Hold
STR-QCB106							✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 203759

Client Details

Client	Golder Associates Pty Ltd
Attention	Rita Bonetti, B Houston
Address	124 Pacific Highway, St Leonards, NSW, 2065

Sample Details

Your Reference	**Sydney Metro**
Number of Samples	1 Soil
Date samples received	23/10/2018
Date completed instructions received	25/10/2018

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	01/11/2018
Date of Issue	01/11/2018

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Giovanni Agosti, Group Technical Manager
Jeremy Faircloth, Organics Supervisor
Long Pham, Team Leader, Metals
Steven Luong, Senior Chemist

Authorised By



Jacinta Hurst, Laboratory Manager

VOCs in soil		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
Date extracted	-	29/10/2018
Date analysed	-	31/10/2018
Dichlorodifluoromethane	mg/kg	<1
Chloromethane	mg/kg	<1
Vinyl Chloride	mg/kg	<1
Bromomethane	mg/kg	<1
Chloroethane	mg/kg	<1
Trichlorofluoromethane	mg/kg	<1
1,1-Dichloroethene	mg/kg	<1
trans-1,2-dichloroethene	mg/kg	<1
1,1-dichloroethane	mg/kg	<1
cis-1,2-dichloroethene	mg/kg	<1
bromochloromethane	mg/kg	<1
chloroform	mg/kg	<1
2,2-dichloropropane	mg/kg	<1
1,2-dichloroethane	mg/kg	<1
1,1,1-trichloroethane	mg/kg	<1
1,1-dichloropropene	mg/kg	<1
Cyclohexane	mg/kg	<1
carbon tetrachloride	mg/kg	<1
Benzene	mg/kg	<0.2
dibromomethane	mg/kg	<1
1,2-dichloropropane	mg/kg	<1
trichloroethene	mg/kg	<1
bromodichloromethane	mg/kg	<1
trans-1,3-dichloropropene	mg/kg	<1
cis-1,3-dichloropropene	mg/kg	<1
1,1,2-trichloroethane	mg/kg	<1
Toluene	mg/kg	<0.5
1,3-dichloropropane	mg/kg	<1
dibromochloromethane	mg/kg	<1
1,2-dibromoethane	mg/kg	<1
tetrachloroethene	mg/kg	<1
1,1,1,2-tetrachloroethane	mg/kg	<1
chlorobenzene	mg/kg	<1
Ethylbenzene	mg/kg	<1
bromoform	mg/kg	<1

VOCs in soil		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
m+p-xylene	mg/kg	<2
styrene	mg/kg	<1
1,1,2,2-tetrachloroethane	mg/kg	<1
o-Xylene	mg/kg	<1
1,2,3-trichloropropane	mg/kg	<1
isopropylbenzene	mg/kg	<1
bromobenzene	mg/kg	<1
n-propyl benzene	mg/kg	<1
2-chlorotoluene	mg/kg	<1
4-chlorotoluene	mg/kg	<1
1,3,5-trimethyl benzene	mg/kg	<1
tert-butyl benzene	mg/kg	<1
1,2,4-trimethyl benzene	mg/kg	<1
1,3-dichlorobenzene	mg/kg	<1
sec-butyl benzene	mg/kg	<1
1,4-dichlorobenzene	mg/kg	<1
4-isopropyl toluene	mg/kg	<1
1,2-dichlorobenzene	mg/kg	<1
n-butyl benzene	mg/kg	<1
1,2-dibromo-3-chloropropane	mg/kg	<1
1,2,4-trichlorobenzene	mg/kg	<1
hexachlorobutadiene	mg/kg	<1
1,2,3-trichlorobenzene	mg/kg	<1
Surrogate Dibromofluorometha	%	103
Surrogate aaa-Trifluorotoluene	%	93
Surrogate Toluene-d_8	%	95
Surrogate 4-Bromofluorobenzene	%	96

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
Date extracted	-	29/10/2018
Date analysed	-	31/10/2018
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	93

svTRH (C10-C40) in Soil		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
Date extracted	-	29/10/2018
Date analysed	-	30/10/2018
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	<100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	85

PAHs in Soil		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
Date extracted	-	29/10/2018
Date analysed	-	30/10/2018
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	0.1
Pyrene	mg/kg	0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	0.06
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	0.3
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5
Surrogate p-Terphenyl-d14	%	98

Organochlorine Pesticides in soil		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
Date extracted	-	29/10/2018
Date analysed	-	30/10/2018
HCB	mg/kg	<0.1
alpha-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Surrogate TCMX	%	108

Organophosphorus Pesticides		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
Date extracted	-	29/10/2018
Date analysed	-	30/10/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Chlorpyriphos	mg/kg	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Dichlorvos	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Ethion	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Parathion	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Surrogate TCMX	%	108

PCBs in Soil		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
Date extracted	-	29/10/2018
Date analysed	-	30/10/2018
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate TCLMX	%	108

Acid Extractable metals in soil		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
Date prepared	-	29/10/2018
Date analysed	-	29/10/2018
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.4
Chromium	mg/kg	7
Copper	mg/kg	5
Lead	mg/kg	19
Mercury	mg/kg	<0.1
Nickel	mg/kg	4
Zinc	mg/kg	21

Misc Soil - Inorg		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
Date prepared	-	29/10/2018
Date analysed	-	30/10/2018
Total Phenolics (as Phenol)	mg/kg	<5

Moisture		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
Date prepared	-	29/10/2018
Date analysed	-	30/10/2018
Moisture	%	6.6

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.

Method ID	Methodology Summary
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: VOCs in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	[NT]
Date extracted	-			29/10/2018	[NT]	[NT]	[NT]	[NT]	29/10/2018	[NT]
Date analysed	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
Dichlorodifluoromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Vinyl Chloride	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromomethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichlorofluoromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-Dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
trans-1,2-dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-dichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
cis-1,2-dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
bromochloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
chloroform	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
2,2-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
1,1,1-trichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	95	[NT]
1,1-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Cyclohexane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
carbon tetrachloride	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzene	mg/kg	0.2	Org-014	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
dibromomethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
trichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	73	[NT]
bromodichloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
trans-1,3-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
cis-1,3-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2-trichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Toluene	mg/kg	0.5	Org-014	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
dibromochloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
1,2-dibromoethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
tetrachloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	90	[NT]
1,1,1,2-tetrachloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
chlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
bromoform	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-014	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
styrene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
o-Xylene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

QUALITY CONTROL: VOCs in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	[NT]
1,2,3-trichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
isopropylbenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
bromobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-propyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-chlorotoluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-chlorotoluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3,5-trimethyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
tert-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trimethyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
sec-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,4-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-isopropyl toluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dibromo-3-chloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
hexachlorobutadiene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluorometha	%		Org-014	103	[NT]	[NT]	[NT]	[NT]	104	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-014	90	[NT]	[NT]	[NT]	[NT]	96	[NT]
Surrogate Toluene-d_8	%		Org-014	96	[NT]	[NT]	[NT]	[NT]	97	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-014	94	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	[NT]
Date extracted	-			29/10/2018	[NT]	[NT]	[NT]	[NT]	29/10/2018	[NT]
Date analysed	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	93	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	93	[NT]
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	[NT]	[NT]	92	[NT]
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	[NT]	[NT]	89	[NT]
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	[NT]	[NT]	94	[NT]
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	94	[NT]
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	90	[NT]	[NT]	[NT]	[NT]	96	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date extracted	-			29/10/2018	[NT]	[NT]	[NT]	[NT]	29/10/2018	[NT]
Date analysed	-			29/10/2018	[NT]	[NT]	[NT]	[NT]	29/10/2018	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	108	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	111	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	111	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	108	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	111	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	111	[NT]
Surrogate o-Terphenyl	%		Org-003	95	[NT]	[NT]	[NT]	[NT]	104	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date extracted	-			29/10/2018	[NT]	[NT]	[NT]	[NT]	29/10/2018	[NT]
Date analysed	-			30/10/2018	[NT]	[NT]	[NT]	[NT]	30/10/2018	[NT]
Naphthalene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Phenanthrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	[NT]	[NT]	[NT]	[NT]	112	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	105	[NT]	[NT]	[NT]	[NT]	93	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date extracted	-			29/10/2018	[NT]	[NT]	[NT]	[NT]	29/10/2018	[NT]
Date analysed	-			30/10/2018	[NT]	[NT]	[NT]	[NT]	30/10/2018	[NT]
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	76	[NT]
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	89	[NT]
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	83	[NT]
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	83	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	89	[NT]
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	84	[NT]
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	83	[NT]
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-005	99	[NT]	[NT]	[NT]	[NT]	113	[NT]

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date extracted	-			29/10/2018	[NT]	[NT]	[NT]	[NT]	29/10/2018	[NT]
Date analysed	-			30/10/2018	[NT]	[NT]	[NT]	[NT]	30/10/2018	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Dimethoate	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Fenitrothion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	113	[NT]
Malathion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	83	[NT]
Parathion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Ronnel	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate TCMX	%		Org-008	99	[NT]	[NT]	[NT]	[NT]	111	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date extracted	-			29/10/2018	[NT]	[NT]	[NT]	[NT]	29/10/2018	[NT]
Date analysed	-			30/10/2018	[NT]	[NT]	[NT]	[NT]	30/10/2018	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCLMX	%		Org-006	99	[NT]	[NT]	[NT]	[NT]	111	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date prepared	-			29/10/2018	[NT]	[NT]	[NT]	[NT]	29/10/2018	[NT]
Date analysed	-			29/10/2018	[NT]	[NT]	[NT]	[NT]	29/10/2018	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	118	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	110	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	114	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	119	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	114	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	119	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	116	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	111	[NT]

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date prepared	-			30/10/2018	[NT]	[NT]	[NT]	[NT]	30/10/2018	[NT]
Date analysed	-			30/10/2018	[NT]	[NT]	[NT]	[NT]	30/10/2018	[NT]
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	[NT]	[NT]	[NT]	[NT]	103	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

CHAIN OF CUSTODY & ANALYSIS REQUEST (COC05)

Page _1_ of __1__

Envirolab
12 Ashley Street, Chatswood,
NSW 2067
T +61 2 9910 6200

Lab ID Number: *(please quote on correspondence)*

Site: 1791865

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro		
Address:	124 Pacific Highway	Purchase Order No:			
	St Leonards NSW	Results Required Date:	5 day TAT		
		Telephone:	0437 039 929	Fax:	
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au		
Quotation No:					

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	ANALYSIS REQUESTED: HOLD	HOLD (FREEZE FOR ASS)	(TRH / BTEXN / PAH / 8 Metals)	OCPs / OPPs	VOCs	PCBs	Total Phenols	asbestos – absence / presence)	Additional Report Formats / Notes/Guidelines/LOR/ Special instructions
	SRT-QCB107	27/10/18	X			1	X								
	SRT-QCB108	27/10/18	X			1			X	X	X	X	X		
	SRT-QCB109	27/10/18	X			1			X						
	SRT-QCB110	28/10/18	X			1	X								
															#204227

Additional Report Formats: NEPM ✓CSV ✓ESDAT; DQO; GO, Guidelines ------; Others _____

Relinquished By: Rita Bonetti	Date/Time: 29/10/2018	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: N/A

Analysis Recd 301018. 18:50 Ellen Wh ELS

CHAIN OF CUSTODY & ANALYSIS REQUEST (COC05)

Envirolab
12 Ashley Street, Chatswood,
NSW 2067
T +61 2 9910 6200

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:			

Lab ID Number: *(please quote on correspondence)*

Site: 1791865

Additional Report Formats

NEPM
☑ CSV
☑ ESDAT
DQO
GO, Guidelines --------
Others _____

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	ANALYSIS REQUESTED: HOLD	HOLD (FREEZE FOR ASS)	(TRH / BTEXN / PAH / 8 Metals)	OCPs / OPPs	VOCs	PCBs	Total Phenols	asbestos – absence / presence)					Notes/Guidelines/LOR/ Special instructions
1	SRT-QCB107	27/10/18	X			1	X												
2	SRT-QCB108	27/10/18	X			1	X												
3	SRT-QCB109	27/10/18	X			1	X												
4	SRT-QCB110	28/10/18	X			1	X												

ENVIROLAB
Envirolab Sc...
12 Ash...
Chatswood NSW 2...
Ph: (02) 9910 ...

Job No: 204227
Date Received: 29.10.18
Time Received: 14:05
Received By: JD
Temp: Cool/Ambient 12.3°C
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished By: [signature]	Date/Time: 29/10/18	Received By: Tanya Doherty (ELS)	Date/Time: 29.10.18 14:05
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Golder Associates Pty Ltd
Attention	Rita Bonetti, B Houston

Sample Login Details

Your reference	Sydney Metro
Envirolab Reference	204227
Date Sample Received	29/10/2018
Date Instructions Received	29/10/2018
Date Results Expected to be Reported	On Hold

Sample Condition

Samples received in appropriate condition for analysis	YES
No. of Samples Provided	4 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	12.3
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	VOCs in soil	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticidesin soil	Organophosphorus Pesticides	PCBsin Soil	Acid Extractable metalsin soil	Misc Soil - Inorg	On Hold
SRT-QCB107										✓
SRT-QCB108										✓
SRT-QCB109										✓
SRT-QCB110										✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 204227

Client Details

Client	Golder Associates Pty Ltd
Attention	Rita Bonetti, B Houston
Address	124 Pacific Highway, St Leonards, NSW, 2065

Sample Details

Your Reference	**Sydney Metro**
Number of Samples	4 Soil
Date samples received	29/10/2018
Date completed instructions received	30/10/2018

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	06/11/2018
Date of Issue	06/11/2018

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Giovanni Agosti, Group Technical Manager
Jeremy Faircloth, Organics Supervisor
Long Pham, Team Leader, Metals
Steven Luong, Senior Chemist

Authorised By



Jacinta Hurst, Laboratory Manager

VOCs in soil		
Our Reference		204227-2
Your Reference	UNITS	SRT-QCB108
Date Sampled		27/10/2018
Type of sample		Soil
Date extracted	-	31/10/2018
Date analysed	-	01/11/2018
Dichlorodifluoromethane	mg/kg	<1
Chloromethane	mg/kg	<1
Vinyl Chloride	mg/kg	<1
Bromomethane	mg/kg	<1
Chloroethane	mg/kg	<1
Trichlorofluoromethane	mg/kg	<1
1,1-Dichloroethene	mg/kg	<1
trans-1,2-dichloroethene	mg/kg	<1
1,1-dichloroethane	mg/kg	<1
cis-1,2-dichloroethene	mg/kg	<1
bromochloromethane	mg/kg	<1
chloroform	mg/kg	<1
2,2-dichloropropane	mg/kg	<1
1,2-dichloroethane	mg/kg	<1
1,1,1-trichloroethane	mg/kg	<1
1,1-dichloropropene	mg/kg	<1
Cyclohexane	mg/kg	<1
carbon tetrachloride	mg/kg	<1
Benzene	mg/kg	<0.2
dibromomethane	mg/kg	<1
1,2-dichloropropane	mg/kg	<1
trichloroethene	mg/kg	<1
bromodichloromethane	mg/kg	<1
trans-1,3-dichloropropene	mg/kg	<1
cis-1,3-dichloropropene	mg/kg	<1
1,1,2-trichloroethane	mg/kg	<1
Toluene	mg/kg	<0.5
1,3-dichloropropane	mg/kg	<1
dibromochloromethane	mg/kg	<1
1,2-dibromoethane	mg/kg	<1
tetrachloroethene	mg/kg	<1
1,1,1,2-tetrachloroethane	mg/kg	<1
chlorobenzene	mg/kg	<1
Ethylbenzene	mg/kg	<1
bromoform	mg/kg	<1

VOCs in soil		
Our Reference		204227-2
Your Reference	UNITS	SRT-QCB108
Date Sampled		27/10/2018
Type of sample		Soil
m+p-xylene	mg/kg	<2
styrene	mg/kg	<1
1,1,2,2-tetrachloroethane	mg/kg	<1
o-Xylene	mg/kg	<1
1,2,3-trichloropropane	mg/kg	<1
isopropylbenzene	mg/kg	<1
bromobenzene	mg/kg	<1
n-propyl benzene	mg/kg	<1
2-chlorotoluene	mg/kg	<1
4-chlorotoluene	mg/kg	<1
1,3,5-trimethyl benzene	mg/kg	<1
tert-butyl benzene	mg/kg	<1
1,2,4-trimethyl benzene	mg/kg	<1
1,3-dichlorobenzene	mg/kg	<1
sec-butyl benzene	mg/kg	<1
1,4-dichlorobenzene	mg/kg	<1
4-isopropyl toluene	mg/kg	<1
1,2-dichlorobenzene	mg/kg	<1
n-butyl benzene	mg/kg	<1
1,2-dibromo-3-chloropropane	mg/kg	<1
1,2,4-trichlorobenzene	mg/kg	<1
hexachlorobutadiene	mg/kg	<1
1,2,3-trichlorobenzene	mg/kg	<1
Surrogate Dibromofluorometha	%	100
Surrogate aaa-Trifluorotoluene	%	82
Surrogate Toluene-d_8	%	99
Surrogate 4-Bromofluorobenzene	%	92

vTRH(C6-C10)/BTEXN in Soil			
Our Reference	UNITS	204227-2	204227-3
Your Reference		SRT-QCB108	SRT-QCB109
Date Sampled		27/10/2018	27/10/2018
Type of sample		Soil	Soil
Date extracted	-	31/10/2018	31/10/2018
Date analysed	-	01/11/2018	01/11/2018
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
naphthalene	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	82	91

svTRH (C10-C40) in Soil			
Our Reference		204227-2	204227-3
Your Reference	UNITS	SRT-QCB108	SRT-QCB109
Date Sampled		27/10/2018	27/10/2018
Type of sample		Soil	Soil
Date extracted	-	31/10/2018	31/10/2018
Date analysed	-	02/11/2018	02/11/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	80	85

PAHs in Soil			
Our Reference	UNITS	204227-2	204227-3
Your Reference		SRT-QCB108	SRT-QCB109
Date Sampled		27/10/2018	27/10/2018
Type of sample		Soil	Soil
Date extracted	-	31/10/2018	31/10/2018
Date analysed	-	02/11/2018	02/11/2018
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	0.2
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.3
Pyrene	mg/kg	<0.1	0.3
Benzo(a)anthracene	mg/kg	<0.1	0.2
Chrysene	mg/kg	<0.1	0.2
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	0.3
Benzo(a)pyrene	mg/kg	<0.05	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.1
Total +ve PAH's	mg/kg	<0.05	2.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	92	94

Organochlorine Pesticides in soil		
Our Reference		204227-2
Your Reference	UNITS	SRT-QCB108
Date Sampled		27/10/2018
Type of sample		Soil
Date extracted	-	31/10/2018
Date analysed	-	02/11/2018
HCB	mg/kg	<0.1
alpha-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Surrogate TCMX	%	114

Organophosphorus Pesticides		
Our Reference		204227-2
Your Reference	UNITS	SRT-QCB108
Date Sampled		27/10/2018
Type of sample		Soil
Date extracted	-	31/10/2018
Date analysed	-	02/11/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Chlorpyriphos	mg/kg	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Dichlorvos	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Ethion	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Parathion	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Surrogate TCMX	%	114

PCBs in Soil		
Our Reference		204227-2
Your Reference	UNITS	SRT-QCB108
Date Sampled		27/10/2018
Type of sample		Soil
Date extracted	-	31/10/2018
Date analysed	-	02/11/2018
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate TCLMX	%	114

Acid Extractable metals in soil			
Our Reference		204227-2	204227-3
Your Reference	UNITS	SRT-QCB108	SRT-QCB109
Date Sampled		27/10/2018	27/10/2018
Type of sample		Soil	Soil
Date prepared	-	31/10/2018	31/10/2018
Date analysed	-	31/10/2018	31/10/2018
Arsenic	mg/kg	<4	<4
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	4	<1
Copper	mg/kg	39	1
Lead	mg/kg	150	7
Mercury	mg/kg	0.3	<0.1
Nickel	mg/kg	3	<1
Zinc	mg/kg	51	8

Misc Soil - Inorg		
Our Reference		204227-2
Your Reference	UNITS	SRT-QCB108
Date Sampled		27/10/2018
Type of sample		Soil
Date prepared	-	31/10/2018
Date analysed	-	31/10/2018
Total Phenolics (as Phenol)	mg/kg	<5

Moisture			
Our Reference		204227-2	204227-3
Your Reference	UNITS	SRT-QCB108	SRT-QCB109
Date Sampled		27/10/2018	27/10/2018
Type of sample		Soil	Soil
Date prepared	-	31/10/2018	31/10/2018
Date analysed	-	01/11/2018	01/11/2018
Moisture	%	12	4.6

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.

Method ID	Methodology Summary
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: VOCs in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	[NT]
Date extracted	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
Date analysed	-			01/11/2018	[NT]	[NT]	[NT]	[NT]	01/11/2018	[NT]
Dichlorodifluoromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Vinyl Chloride	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromomethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichlorofluoromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-Dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
trans-1,2-dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-dichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
cis-1,2-dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
bromochloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
chloroform	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	86	[NT]
2,2-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	87	[NT]
1,1,1-trichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	86	[NT]
1,1-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Cyclohexane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
carbon tetrachloride	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzene	mg/kg	0.2	Org-014	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
dibromomethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
trichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	79	[NT]
bromodichloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
trans-1,3-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
cis-1,3-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2-trichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Toluene	mg/kg	0.5	Org-014	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
dibromochloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
1,2-dibromoethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
tetrachloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	80	[NT]
1,1,1,2-tetrachloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
chlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
bromoform	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-014	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
styrene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
o-Xylene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

QUALITY CONTROL: VOCs in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	[NT]
1,2,3-trichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
isopropylbenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
bromobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-propyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-chlorotoluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-chlorotoluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3,5-trimethyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
tert-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trimethyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
sec-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,4-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-isopropyl toluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dibromo-3-chloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
hexachlorobutadiene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluorometha	%		Org-014	100	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-014	81	[NT]	[NT]	[NT]	[NT]	82	[NT]
Surrogate Toluene-d_8	%		Org-014	98	[NT]	[NT]	[NT]	[NT]	99	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-014	97	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	[NT]
Date extracted	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
Date analysed	-			01/11/2018	[NT]	[NT]	[NT]	[NT]	01/11/2018	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	81	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	81	[NT]
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	[NT]	[NT]	77	[NT]
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	[NT]	[NT]	78	[NT]
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	84	[NT]
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	[NT]	[NT]	82	[NT]
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	80	[NT]
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	78	[NT]	[NT]	[NT]	[NT]	82	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date extracted	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
Date analysed	-			02/11/2018	[NT]	[NT]	[NT]	[NT]	02/11/2018	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	107	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	107	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	111	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	107	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	107	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	111	[NT]
Surrogate o-Terphenyl	%		Org-003	100	[NT]	[NT]	[NT]	[NT]	122	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	[NT]
Date extracted	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
Date analysed	-			02/11/2018	[NT]	[NT]	[NT]	[NT]	02/11/2018	[NT]
Naphthalene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	113	[NT]
Phenanthrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	119	[NT]
Anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	117	[NT]
Pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	[NT]	[NT]	[NT]	[NT]	114	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	96	[NT]	[NT]	[NT]	[NT]	107	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	[NT]
Date extracted	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
Date analysed	-			02/11/2018	[NT]	[NT]	[NT]	[NT]	02/11/2018	[NT]
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	76	[NT]
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	85	[NT]
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	77	[NT]
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-005	120	[NT]	[NT]	[NT]	[NT]	113	[NT]

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	[NT]
Date extracted	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
Date analysed	-			02/11/2018	[NT]	[NT]	[NT]	[NT]	02/11/2018	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Dimethoate	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	116	[NT]
Fenitrothion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Malathion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	73	[NT]
Parathion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	107	[NT]
Ronnel	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Surrogate TCMX	%		Org-008	120	[NT]	[NT]	[NT]	[NT]	113	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	[NT]
Date extracted	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
Date analysed	-			02/11/2018	[NT]	[NT]	[NT]	[NT]	02/11/2018	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCLMX	%		Org-006	120	[NT]	[NT]	[NT]	[NT]	113	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	204227-3
Date prepared	-			31/10/2018	2	31/10/2018	31/10/2018		31/10/2018	31/10/2018
Date analysed	-			31/10/2018	2	31/10/2018	31/10/2018		31/10/2018	31/10/2018
Arsenic	mg/kg	4	Metals-020	<4	2	<4	<4	0	107	100
Cadmium	mg/kg	0.4	Metals-020	<0.4	2	<0.4	<0.4	0	98	106
Chromium	mg/kg	1	Metals-020	<1	2	4	5	22	103	105
Copper	mg/kg	1	Metals-020	<1	2	39	33	17	108	111
Lead	mg/kg	1	Metals-020	<1	2	150	230	42	100	107
Mercury	mg/kg	0.1	Metals-021	<0.1	2	0.3	0.3	0	110	120
Nickel	mg/kg	1	Metals-020	<1	2	3	4	29	103	109
Zinc	mg/kg	1	Metals-020	<1	2	51	63	21	98	98

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	[NT]
Date prepared	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
Date analysed	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	[NT]	[NT]	[NT]	[NT]	108	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

CHAIN OF CUSTODY & ANALYSIS REQUEST (COC09)

Envirolab
12 Ashley Street, Chatswood,
NSW 2067
T +61 2 9910 6200

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:			

Lab ID Number: *(please quote on correspondence)*

Site: 1791865

Additional Report Formats

- NEPM
  - ✓CSV
  - ✓ ESDAT
- DQO
- GO, Guidelines ------
- Others _____

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other ____	NO. OF CONTAINERS	ANALYSIS REQUESTED: HOLD	W-26 (TRH / BTEX / PAHs / Dissolved	EP074 (VOCs)	NT-01 & 02A (Ca, Mg, Na, K, Cl, SO4	NT11 (Total nitrogen and total phosphorus)	EK071G (Reactive Phosphorus)	EK055G (Ammonia as N)	EP231X (PFAS full suite)	W-13 (OCPs / OPPs / PCBs)	EP075 (Phenols - TOTAL)				Notes/Guidelines/LOR/ Special instructions
	SRT-QCB200	28/10/18		X		10	X	X	X	X	X	X	X	X	X	X				
																				# 204219

Relinquished By: Rita Bonetti	Date/Time: 29/10/2018	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: Analysis Recd 301018. 1850 Elkin WG ELS [signature]

CHAIN OF CUSTODY & ANALYSIS REQUEST (COC05)

Page _1_ of __1__

Envirolab
12 Ashley Street, Chatswood,
NSW 2067
T +61 2 9910 6200

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 / Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:			

Lab ID Number: *(please quote on correspondence)*

Site: 1791865

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	ANALYSIS REQUESTED	Additional Report Formats / Notes/Guidelines/LOR/ Special Instructions
1	SRT-QCB200	28/10/18		X		10	X		

Additional Report Formats: NEPM ☑CSV ☑ESDAT; DQO; GO, Guidelines ---------; Others _____

Notes/Guidelines/LOR/ Special Instructions

ENVIROLAB GROUP
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 204219

Date Received: 29.10.18
Time Received: 14:05
Received By: TO
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished By:	Date/Time: 29/10/18	Received By: ELS Tony Dinh	Date/Time: 29.10.18 14:05
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Golder Associates Pty Ltd
Attention	Rita Bonetti, B Houston

Sample Login Details

Your reference	Sydney Metro
Envirolab Reference	204219
Date Sample Received	29/10/2018
Date Instructions Received	29/10/2018
Date Results Expected to be Reported	On Hold

Sample Condition

Samples received in appropriate condition for analysis	YES
No. of Samples Provided	1 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	10.5
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	On Hold
SRT-QCB200	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info
Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 204219

Client Details

Client	Golder Associates Pty Ltd
Attention	Rita Bonetti, B Houston
Address	124 Pacific Highway, St Leonards, NSW, 2065

Sample Details

Your Reference	**Sydney Metro**
Number of Samples	1 Water
Date samples received	29/10/2018
Date completed instructions received	30/10/2018

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	06/11/2018
Date of Issue	06/11/2018

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Giovanni Agosti, Group Technical Manager
Jeremy Faircloth, Organics Supervisor
Long Pham, Team Leader, Metals
Nick Sarlamis, Inorganics Supervisor
Phalak Inthakesone, Organics Development Manager, Sydney
Steven Luong, Senior Chemist

Authorised By



Jacinta Hurst, Laboratory Manager

VOCs in water		
Our Reference		204219-1
Your Reference	UNITS	SRT-QCB200
Date Sampled		28/10/2018
Type of sample		Water
Date extracted	-	31/10/2018
Date analysed	-	01/11/2018
Dichlorodifluoromethane	µg/L	<10
Chloromethane	µg/L	<10
Vinyl Chloride	µg/L	<10
Bromomethane	µg/L	<10
Chloroethane	µg/L	<10
Trichlorofluoromethane	µg/L	<10
1,1-Dichloroethene	µg/L	<1
Trans-1,2-dichloroethene	µg/L	<1
1,1-dichloroethane	µg/L	<1
Cis-1,2-dichloroethene	µg/L	<1
Bromochloromethane	µg/L	<1
Chloroform	µg/L	16
2,2-dichloropropane	µg/L	<1
1,2-dichloroethane	µg/L	<1
1,1,1-trichloroethane	µg/L	<1
1,1-dichloropropene	µg/L	<1
Cyclohexane	µg/L	<1
Carbon tetrachloride	µg/L	<1
Benzene	µg/L	<1
Dibromomethane	µg/L	<1
1,2-dichloropropane	µg/L	<1
Trichloroethene	µg/L	<1
Bromodichloromethane	µg/L	<1
trans-1,3-dichloropropene	µg/L	<1
cis-1,3-dichloropropene	µg/L	<1
1,1,2-trichloroethane	µg/L	<1
Toluene	µg/L	<1
1,3-dichloropropane	µg/L	<1
Dibromochloromethane	µg/L	<1
1,2-dibromoethane	µg/L	<1
Tetrachloroethene	µg/L	1
1,1,1,2-tetrachloroethane	µg/L	<1
Chlorobenzene	µg/L	<1
Ethylbenzene	µg/L	<1
Bromoform	µg/L	<1

VOCs in water		
Our Reference		204219-1
Your Reference	UNITS	SRT-QCB200
Date Sampled		28/10/2018
Type of sample		Water
m+p-xylene	µg/L	<2
Styrene	µg/L	<1
1,1,2,2-tetrachloroethane	µg/L	<1
o-xylene	µg/L	<1
1,2,3-trichloropropane	µg/L	<1
Isopropylbenzene	µg/L	<1
Bromobenzene	µg/L	<1
n-propyl benzene	µg/L	<1
2-chlorotoluene	µg/L	<1
4-chlorotoluene	µg/L	<1
1,3,5-trimethyl benzene	µg/L	<1
Tert-butyl benzene	µg/L	<1
1,2,4-trimethyl benzene	µg/L	<1
1,3-dichlorobenzene	µg/L	<1
Sec-butyl benzene	µg/L	<1
1,4-dichlorobenzene	µg/L	<1
4-isopropyl toluene	µg/L	<1
1,2-dichlorobenzene	µg/L	<1
n-butyl benzene	µg/L	<1
1,2-dibromo-3-chloropropane	µg/L	<1
1,2,4-trichlorobenzene	µg/L	<1
Hexachlorobutadiene	µg/L	<1
1,2,3-trichlorobenzene	µg/L	<1
Surrogate Dibromofluoromethane	%	96
Surrogate toluene-d8	%	97
Surrogate 4-BFB	%	95

vTRH(C6-C10)/BTEXN in Water		
Our Reference	UNITS	204219-1
Your Reference		SRT-QCB200
Date Sampled		28/10/2018
Type of sample		Water
Date extracted	-	31/10/2018
Date analysed	-	01/11/2018
TRH C_6 - C_9	µg/L	16
TRH C_6 - C_{10}	µg/L	17
TRH C_6 - C_{10} less BTEX (F1)	µg/L	17
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	96
Surrogate toluene-d8	%	97
Surrogate 4-BFB	%	95

svTRH (C10-C40) in Water		
Our Reference		204219-1
Your Reference	UNITS	SRT-QCB200
Date Sampled		28/10/2018
Type of sample		Water
Date extracted	-	02/11/2018
Date analysed	-	03/11/2018
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
TRH >C_{10} - C_{16}	µg/L	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50
TRH >C_{16} - C_{34}	µg/L	<100
TRH >C_{34} - C_{40}	µg/L	<100
Surrogate o-Terphenyl	%	79

PAHs in Water		
Our Reference	UNITS	204219-1
Your Reference		SRT-QCB200
Date Sampled		28/10/2018
Type of sample		Water
Date extracted	-	02/11/2018
Date analysed	-	05/11/2018
Naphthalene	µg/L	<1
Acenaphthylene	µg/L	<1
Acenaphthene	µg/L	<1
Fluorene	µg/L	<1
Phenanthrene	µg/L	<1
Anthracene	µg/L	<1
Fluoranthene	µg/L	<1
Pyrene	µg/L	<1
Benzo(a)anthracene	µg/L	<1
Chrysene	µg/L	<1
Benzo(b,j+k)fluoranthene	µg/L	<2
Benzo(a)pyrene	µg/L	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1
Dibenzo(a,h)anthracene	µg/L	<1
Benzo(g,h,i)perylene	µg/L	<1
Benzo(a)pyrene TEQ	µg/L	<5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	107

OCP in water		
Our Reference		204219-1
Your Reference	UNITS	SRT-QCB200
Date Sampled		28/10/2018
Type of sample		Water
Date extracted	-	02/11/2018
Date analysed	-	02/11/2018
HCB	µg/L	<0.2
alpha-BHC	µg/L	<0.2
gamma-BHC	µg/L	<0.2
beta-BHC	µg/L	<0.2
Heptachlor	µg/L	<0.2
delta-BHC	µg/L	<0.2
Aldrin	µg/L	<0.2
Heptachlor Epoxide	µg/L	<0.2
gamma-Chlordane	µg/L	<0.2
alpha-Chlordane	µg/L	<0.2
Endosulfan I	µg/L	<0.2
pp-DDE	µg/L	<0.2
Dieldrin	µg/L	<0.2
Endrin	µg/L	<0.2
pp-DDD	µg/L	<0.2
Endosulfan II	µg/L	<0.2
pp-DDT	µg/L	<0.2
Endrin Aldehyde	µg/L	<0.2
Endosulfan Sulphate	µg/L	<0.2
Methoxychlor	µg/L	<0.2
Surrogate TCMX	%	99

OP Pesticides in water		
Our Reference	UNITS	204219-1
Your Reference		SRT-QCB200
Date Sampled		28/10/2018
Type of sample		Water
Date extracted	-	02/11/2018
Date analysed	-	02/11/2018
Azinphos-methyl (Guthion)	µg/L	<0.2
Bromophos ethyl	µg/L	<0.2
Chlorpyriphos	µg/L	<0.2
Chlorpyriphos-methyl	µg/L	<0.2
Diazinon	µg/L	<0.2
Dichlorovos	µg/L	<0.2
Dimethoate	µg/L	<0.2
Ethion	µg/L	<0.2
Fenitrothion	µg/L	<0.2
Malathion	µg/L	<0.2
Parathion	µg/L	<0.2
Ronnel	µg/L	<0.2
Surrogate TCMX	%	99

PCBs in Water		
Our Reference		204219-1
Your Reference	UNITS	SRT-QCB200
Date Sampled		28/10/2018
Type of sample		Water
Date extracted	-	02/11/2018
Date analysed	-	02/11/2018
Aroclor 1016	µg/L	<2
Aroclor 1221	µg/L	<2
Aroclor 1232	µg/L	<2
Aroclor 1242	µg/L	<2
Aroclor 1248	µg/L	<2
Aroclor 1254	µg/L	<2
Aroclor 1260	µg/L	<2
Surrogate TCLMX	%	99

Total Phenolics in Water		
Our Reference		204219-1
Your Reference	UNITS	SRT-QCB200
Date Sampled		28/10/2018
Type of sample		Water
Date extracted	-	31/10/2018
Date analysed	-	31/10/2018
Total Phenolics (as Phenol)	mg/L	<0.05

HM in water - dissolved		
Our Reference		204219-1
Your Reference	UNITS	SRT-QCB200
Date Sampled		28/10/2018
Type of sample		Water
Date prepared	-	31/10/2018
Date analysed	-	31/10/2018
Arsenic-Dissolved	µg/L	<1
Cadmium-Dissolved	µg/L	0.1
Chromium-Dissolved	µg/L	<1
Copper-Dissolved	µg/L	1
Lead-Dissolved	µg/L	<1
Mercury-Dissolved	µg/L	<0.05
Nickel-Dissolved	µg/L	<1
Zinc-Dissolved	µg/L	60

Metals in Waters - Total		
Our Reference		204219-1
Your Reference	UNITS	SRT-QCB200
Date Sampled		28/10/2018
Type of sample		Water
Date prepared	-	31/10/2018
Date analysed	-	31/10/2018
Phosphorus - Total	mg/L	0.06

Miscellaneous Inorganics		
Our Reference		204219-1
Your Reference	UNITS	SRT-QCB200
Date Sampled		28/10/2018
Type of sample		Water
Date prepared	-	05/11/2018
Date analysed	-	05/11/2018
Total Nitrogen in water	mg/L	44
Phosphate as P in water	mg/L	0.042
Ammonia as N in water	mg/L	<0.005
Chloride, Cl	mg/L	41
Sulphate, SO4	mg/L	49

Cations in water Dissolved		
Our Reference		204219-1
Your Reference	UNITS	SRT-QCB200
Date Sampled		28/10/2018
Type of sample		Water
Date digested	-	31/10/2018
Date analysed	-	31/10/2018
Sodium - Dissolved	mg/L	32
Potassium - Dissolved	mg/L	6.4
Calcium - Dissolved	mg/L	36
Magnesium - Dissolved	mg/L	7.2

PFAS in Waters Extended		
Our Reference		204219-1
Your Reference	UNITS	SRT-QCB200
Date Sampled		28/10/2018
Type of sample		Water
Date prepared	-	31/10/2018
Date analysed	-	31/10/2018
Perfluorobutanesulfonic acid	µg/L	<0.01
Perfluoropentanesulfonic acid	µg/L	<0.01
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01
Perfluoroheptanesulfonic acid	µg/L	<0.01
Perfluorooctanesulfonic acid PFOS	µg/L	0.04
Perfluorodecanesulfonic acid	µg/L	<0.02
Perfluorobutanoic acid	µg/L	<0.02
Perfluoropentanoic acid	µg/L	<0.02
Perfluorohexanoic acid	µg/L	<0.01
Perfluoroheptanoic acid	µg/L	<0.01
Perfluorooctanoic acid PFOA	µg/L	<0.01
Perfluorononanoic acid	µg/L	<0.01
Perfluorodecanoic acid	µg/L	<0.02
Perfluoroundecanoic acid	µg/L	<0.02
Perfluorododecanoic acid	µg/L	<0.05
Perfluorotridecanoic acid	µg/L	<0.1
Perfluorotetradecanoic acid	µg/L	<0.5
4:2 FTS	µg/L	<0.01
6:2 FTS	µg/L	<0.01
8:2 FTS	µg/L	<0.01
10:2 FTS	µg/L	<0.01
Perfluorooctane sulfonamide	µg/L	<0.1
N-Methyl perfluorooctane sulfonamide	µg/L	<0.05
N-Ethyl perfluorooctanesulfon amide	µg/L	<0.1
N-Me perfluorooctanesulfonamid oethanol	µg/L	<0.05
N-Et perfluorooctanesulfonamid oethanol	µg/L	<0.5
MePerfluorooctanesulf- amid oacetic acid	µg/L	<0.02
EtPerfluorooctanesulf- amid oacetic acid	µg/L	<0.02
Surrogate $^{13}C_8$ *PFOS*	%	100
Surrogate $^{13}C_2$ *PFOA*	%	102
Extracted ISTD $^{13}C_3$ *PFBS*	%	98
Extracted ISTD $^{18}O_2$ *PFHxS*	%	100
Extracted ISTD $^{13}C_4$ *PFOS*	%	95
Extracted ISTD $^{13}C_4$ *PFBA*	%	105
Extracted ISTD $^{13}C_3$ *PFPeA*	%	101

PFAS in Waters Extended		
Our Reference		204219-1
Your Reference	UNITS	SRT-QCB200
Date Sampled		28/10/2018
Type of sample		Water
Extracted ISTD $^{13}C_2$ *PFHxA*	%	99
Extracted ISTD $^{13}C_4$ *PFHpA*	%	99
Extracted ISTD $^{13}C_4$ *PFOA*	%	94
Extracted ISTD $^{13}C_5$ *PFNA*	%	103
Extracted ISTD $^{13}C_2$ *PFDA*	%	91
Extracted ISTD $^{13}C_2$ *PFUnDA*	%	80
Extracted ISTD $^{13}C_2$ *PFDoDA*	%	68
Extracted ISTD $^{13}C_2$ *PFTeDA*	%	59
Extracted ISTD $^{13}C_2$ *4:2FTS*	%	97
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	105
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	92
Extracted ISTD $^{13}C_8$ *FOSA*	%	102
Extracted ISTD d_3 *N MeFOSA*	%	71
Extracted ISTD d_5 *N EtFOSA*	%	72
Extracted ISTD d_7 *N MeFOSE*	%	105
Extracted ISTD d_9 *N EtFOSE*	%	105
Extracted ISTD d_3 *N MeFOSAA*	%	79
Extracted ISTD d_5 *N EtFOSAA*	%	75
Total Positive PFHxS & PFOS	µg/L	0.05
Total Positive PFOA & PFOS	µg/L	0.04
Total Positive PFAS	µg/L	0.05

Method ID	Methodology Summary
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Inorg-055/062	Total Nitrogen - Calculation sum of TKN and oxidised Nitrogen.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Soils are analysed following a KCl extraction.
Inorg-060	Phosphate determined colourimetrically based on EPA365.1 and APHA latest edition 4500 P E. Soils are analysed following a water extraction.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Alternatively determined by colourimetry/turbidity using Discrete Analyer.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-013	Water samples are analysed directly by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

Method ID	Methodology Summary
Org-035	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.1 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: VOCs in water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			31/10/2018	1	31/10/2018	05/11/2018		31/10/2018	[NT]
Date analysed	-			01/11/2018	1	01/11/2018	06/11/2018		01/11/2018	[NT]
Dichlorodifluoromethane	µg/L	10	Org-013	<10	1	<10	<10	0	[NT]	[NT]
Chloromethane	µg/L	10	Org-013	<10	1	<10	<10	0	[NT]	[NT]
Vinyl Chloride	µg/L	10	Org-013	<10	1	<10	<10	0	[NT]	[NT]
Bromomethane	µg/L	10	Org-013	<10	1	<10	<10	0	[NT]	[NT]
Chloroethane	µg/L	10	Org-013	<10	1	<10	<10	0	[NT]	[NT]
Trichlorofluoromethane	µg/L	10	Org-013	<10	1	<10	<10	0	[NT]	[NT]
1,1-Dichloroethene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Trans-1,2-dichloroethene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,1-dichloroethane	µg/L	1	Org-013	<1	1	<1	<1	0	97	[NT]
Cis-1,2-dichloroethene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Bromochloromethane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Chloroform	µg/L	1	Org-013	<1	1	16	15	6	94	[NT]
2,2-dichloropropane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,2-dichloroethane	µg/L	1	Org-013	<1	1	<1	<1	0	92	[NT]
1,1,1-trichloroethane	µg/L	1	Org-013	<1	1	<1	<1	0	100	[NT]
1,1-dichloropropene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Cyclohexane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Carbon tetrachloride	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Benzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Dibromomethane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,2-dichloropropane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Trichloroethene	µg/L	1	Org-013	<1	1	<1	<1	0	94	[NT]
Bromodichloromethane	µg/L	1	Org-013	<1	1	<1	<1	0	100	[NT]
trans-1,3-dichloropropene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
cis-1,3-dichloropropene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,1,2-trichloroethane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Toluene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,3-dichloropropane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Dibromochloromethane	µg/L	1	Org-013	<1	1	<1	<1	0	96	[NT]
1,2-dibromoethane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Tetrachloroethene	µg/L	1	Org-013	<1	1	1	1	0	97	[NT]
1,1,1,2-tetrachloroethane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Chlorobenzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Ethylbenzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Bromoform	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
m+p-xylene	µg/L	2	Org-013	<2	1	<2	<2	0	[NT]	[NT]
Styrene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,1,2,2-tetrachloroethane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
o-xylene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]

QUALITY CONTROL: VOCs in water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
1,2,3-trichloropropane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Isopropylbenzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Bromobenzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
n-propyl benzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
2-chlorotoluene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
4-chlorotoluene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,3,5-trimethyl benzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Tert-butyl benzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,2,4-trimethyl benzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,3-dichlorobenzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Sec-butyl benzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,4-dichlorobenzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
4-isopropyl toluene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,2-dichlorobenzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
n-butyl benzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,2-dibromo-3-chloropropane	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,2,4-trichlorobenzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Hexachlorobutadiene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
1,2,3-trichlorobenzene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-013	91	1	96	104	8	90	[NT]
Surrogate toluene-d8	%		Org-013	96	1	97	99	2	99	[NT]
Surrogate 4-BFB	%		Org-013	95	1	95	98	3	98	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			31/10/2018	1	31/10/2018	31/10/2018		31/10/2018	[NT]
Date analysed	-			01/11/2018	1	01/11/2018	01/11/2018		01/11/2018	[NT]
TRH C_6 - C_9	µg/L	10	Org-016	<10	1	16	22	32	100	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-016	<10	1	17	35	69	100	[NT]
Benzene	µg/L	1	Org-016	<1	1	<1	<1	0	96	[NT]
Toluene	µg/L	1	Org-016	<1	1	<1	<1	0	109	[NT]
Ethylbenzene	µg/L	1	Org-016	<1	1	<1	<1	0	105	[NT]
m+p-xylene	µg/L	2	Org-016	<2	1	<2	<2	0	94	[NT]
o-xylene	µg/L	1	Org-016	<1	1	<1	<1	0	94	[NT]
Naphthalene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-016	91	1	96	104	8	90	[NT]
Surrogate toluene-d8	%		Org-016	96	1	97	99	2	99	[NT]
Surrogate 4-BFB	%		Org-016	95	1	95	98	3	98	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			02/11/2018	[NT]	[NT]	[NT]	[NT]	02/11/2018	[NT]
Date analysed	-			03/11/2018	[NT]	[NT]	[NT]	[NT]	03/11/2018	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	95	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	92	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	118	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	95	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	92	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	118	[NT]
Surrogate o-Terphenyl	%		Org-003	95	[NT]	[NT]	[NT]	[NT]	127	[NT]

QUALITY CONTROL: PAHs in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			02/11/2018	[NT]	[NT]	[NT]	[NT]	02/11/2018	[NT]
Date analysed	-			05/11/2018	[NT]	[NT]	[NT]	[NT]	05/11/2018	[NT]
Naphthalene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	67	[NT]
Acenaphthylene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	85	[NT]
Phenanthrene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Anthracene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Pyrene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	80	[NT]
Benzo(a)anthracene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	81	[NT]
Benzo(b,j+k)fluoranthene	µg/L	2	Org-012	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	80	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	1	Org-012	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	82	[NT]	[NT]	[NT]	[NT]	81	[NT]

QUALITY CONTROL: OCP in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			02/11/2018	[NT]	[NT]	[NT]	[NT]	02/11/2018	[NT]
Date analysed	-			02/11/2018	[NT]	[NT]	[NT]	[NT]	02/11/2018	[NT]
HCB	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NT]	[NT]	76	[NT]
gamma-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NT]	[NT]	78	[NT]
Heptachlor	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NT]	[NT]	78	[NT]
delta-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NT]	[NT]	72	[NT]
Heptachlor Epoxide	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NT]	[NT]	78	[NT]
gamma-Chlordane	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-Chlordane	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NT]	[NT]	87	[NT]
Dieldrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NT]	[NT]	82	[NT]
Endrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NT]	[NT]	86	[NT]
pp-DDD	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NT]	[NT]	97	[NT]
Endosulfan II	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endrin Aldehyde	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NT]	[NT]	97	[NT]
Methoxychlor	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-005	93	[NT]	[NT]	[NT]	[NT]	87	[NT]

QUALITY CONTROL: OP Pesticides in water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			02/11/2018	[NT]	[NT]	[NT]	[NT]	02/11/2018	[NT]
Date analysed	-			02/11/2018	[NT]	[NT]	[NT]	[NT]	02/11/2018	[NT]
Azinphos-methyl (Guthion)	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromophos ethyl	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyriphos	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NT]	[NT]	84	[NT]
Chlorpyriphos-methyl	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Diazinon	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dichlorovos	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NT]	[NT]	94	[NT]
Dimethoate	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NT]	[NT]	89	[NT]
Fenitrothion	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NT]	[NT]	96	[NT]
Malathion	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NT]	[NT]	85	[NT]
Parathion	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NT]	[NT]	102	[NT]
Ronnel	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NT]	[NT]	92	[NT]
Surrogate TCMX	%		Org-008	93	[NT]	[NT]	[NT]	[NT]	102	[NT]

QUALITY CONTROL: PCBs in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			02/11/2018	[NT]	[NT]	[NT]	[NT]	02/11/2018	[NT]
Date analysed	-			02/11/2018	[NT]	[NT]	[NT]	[NT]	02/11/2018	[NT]
Aroclor 1016	µg/L	2	Org-006	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	µg/L	2	Org-006	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	µg/L	2	Org-006	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	µg/L	2	Org-006	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	µg/L	2	Org-006	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	µg/L	2	Org-006	<2	[NT]	[NT]	[NT]	[NT]	96	[NT]
Aroclor 1260	µg/L	2	Org-006	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCLMX	%		Org-006	93	[NT]	[NT]	[NT]	[NT]	102	[NT]

QUALITY CONTROL: Total Phenolics in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
Date analysed	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
Total Phenolics (as Phenol)	mg/L	0.05	Inorg-031	<0.05	[NT]	[NT]	[NT]	[NT]	103	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date prepared	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
Date analysed	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	[NT]	[NT]	[NT]	[NT]	107	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	[NT]	[NT]	[NT]	[NT]	93	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]

QUALITY CONTROL: Metals in Waters - Total						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
Date analysed	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
Phosphorus - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	106	[NT]

QUALITY CONTROL: Miscellaneous Inorganics					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			05/11/2018	[NT]	[NT]	[NT]	[NT]	05/11/2018	[NT]
Date analysed	-			05/11/2018	[NT]	[NT]	[NT]	[NT]	05/11/2018	[NT]
Total Nitrogen in water	mg/L	0.1	Inorg-055/062	<0.1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Phosphate as P in water	mg/L	0.005	Inorg-060	<0.005	[NT]	[NT]	[NT]	[NT]	109	[NT]
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	[NT]	[NT]	[NT]	[NT]	102	[NT]
Chloride, Cl	mg/L	1	Inorg-081	<1	[NT]	[NT]	[NT]	[NT]	115	[NT]
Sulphate, SO4	mg/L	1	Inorg-081	<1	[NT]	[NT]	[NT]	[NT]	117	[NT]

QUALITY CONTROL: Cations in water Dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date digested	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
Date analysed	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
Sodium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	[NT]	[NT]	97	[NT]
Potassium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	[NT]	[NT]	115	[NT]
Calcium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	[NT]	[NT]	105	[NT]
Magnesium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	[NT]	[NT]	105	[NT]

QUALITY CONTROL: PFAS in Waters Extended						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	204219-1
Date prepared	-			31/10/2018	1	31/10/2018	31/10/2018		31/10/2018	31/10/2018
Date analysed	-			31/10/2018	1	31/10/2018	31/10/2018		31/10/2018	31/10/2018
Perfluorobutanesulfonic acid	µg/L	0.01	Org-035	<0.01	1	<0.01	<0.01	0	117	108
Perfluoropentanesulfonic acid	µg/L	0.01	Org-035	<0.01	1	<0.01	<0.01	0	114	111
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01	Org-035	<0.01	1	0.01	0.01	0	109	100
Perfluoroheptanesulfonic acid	µg/L	0.01	Org-035	<0.01	1	<0.01	<0.01	0	110	111
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-035	<0.01	1	0.04	0.04	0	109	114
Perfluorodecanesulfonic acid	µg/L	0.02	Org-035	<0.02	1	<0.02	<0.02	0	106	103
Perfluorobutanoic acid	µg/L	0.02	Org-035	<0.02	1	<0.02	<0.02	0	114	114
Perfluoropentanoic acid	µg/L	0.02	Org-035	<0.02	1	<0.02	<0.02	0	113	115
Perfluorohexanoic acid	µg/L	0.01	Org-035	<0.01	1	<0.01	<0.01	0	110	109
Perfluoroheptanoic acid	µg/L	0.01	Org-035	<0.01	1	<0.01	<0.01	0	115	106
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-035	<0.01	1	<0.01	<0.01	0	108	108
Perfluorononanoic acid	µg/L	0.01	Org-035	<0.01	1	<0.01	<0.01	0	107	104
Perfluorodecanoic acid	µg/L	0.02	Org-035	<0.02	1	<0.02	<0.02	0	102	99
Perfluoroundecanoic acid	µg/L	0.02	Org-035	<0.02	1	<0.02	<0.02	0	103	90
Perfluorododecanoic acid	µg/L	0.05	Org-035	<0.05	1	<0.05	<0.05	0	102	99
Perfluorotridecanoic acid	µg/L	0.1	Org-035	<0.1	1	<0.1	<0.1	0	115	122
Perfluorotetradecanoic acid	µg/L	0.5	Org-035	<0.5	1	<0.5	<0.5	0	100	95
4:2 FTS	µg/L	0.01	Org-035	<0.01	1	<0.01	<0.01	0	115	113
6:2 FTS	µg/L	0.01	Org-035	<0.01	1	<0.01	<0.01	0	116	106
8:2 FTS	µg/L	0.01	Org-035	<0.01	1	<0.01	<0.01	0	110	114
10:2 FTS	µg/L	0.01	Org-035	<0.01	1	<0.01	<0.01	0	117	112
Perfluorooctane sulfonamide	µg/L	0.1	Org-035	<0.1	1	<0.1	<0.1	0	98	100
N-Methyl perfluorooctane sulfonamide	µg/L	0.05	Org-035	<0.05	1	<0.05	<0.05	0	115	113
N-Ethyl perfluorooctanesulfon amide	µg/L	0.1	Org-035	<0.1	1	<0.1	<0.1	0	111	112
N-Me perfluorooctanesulfonamid oethanol	µg/L	0.05	Org-035	<0.05	1	<0.05	<0.05	0	96	100
N-Et perfluorooctanesulfonamid oethanol	µg/L	0.5	Org-035	<0.5	1	<0.5	<0.5	0	94	104
MePerfluorooctanesulf- amid oacetic acid	µg/L	0.02	Org-035	<0.02	1	<0.02	<0.02	0	112	108
EtPerfluorooctanesulf- amid oacetic acid	µg/L	0.02	Org-035	<0.02	1	<0.02	<0.02	0	103	114
Surrogate $^{13}C_8$ *PFOS*	%		Org-035	98	1	100	101	1	100	101
Surrogate $^{13}C_2$ *PFOA*	%		Org-035	98	1	102	100	2	101	101
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-035	100	1	98	100	2	89	93

QUALITY CONTROL: PFAS in Waters Extended						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	204219-1
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-035	97	1	100	103	3	94	101
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-035	98	1	95	94	1	94	90
Extracted ISTD $^{13}C_4$ *PFBA*	%		Org-035	105	1	105	106	1	98	102
Extracted ISTD $^{13}C_3$ *PFPeA*	%		Org-035	103	1	101	101	0	96	96
Extracted ISTD $^{13}C_2$ *PFHxA*	%		Org-035	99	1	99	98	1	93	94
Extracted ISTD $^{13}C_4$ *PFHpA*	%		Org-035	99	1	99	99	0	93	95
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-035	98	1	94	98	4	90	93
Extracted ISTD $^{13}C_5$ *PFNA*	%		Org-035	97	1	103	99	4	98	100
Extracted ISTD $^{13}C_2$ *PFDA*	%		Org-035	102	1	91	95	4	101	96
Extracted ISTD $^{13}C_2$ *PFUnDA*	%		Org-035	97	1	80	86	7	96	86
Extracted ISTD $^{13}C_2$ *PFDoDA*	%		Org-035	84	1	68	72	6	85	73
Extracted ISTD $^{13}C_2$ *PFTeDA*	%		Org-035	98	1	59	71	18	87	63
Extracted ISTD $^{13}C_2$ *4:2FTS*	%		Org-035	98	1	97	95	2	93	96
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-035	100	1	105	107	2	93	100
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-035	101	1	92	94	2	94	91
Extracted ISTD $^{13}C_8$ *FOSA*	%		Org-035	106	1	102	101	1	100	100
Extracted ISTD d_3 *N MeFOSA*	%		Org-035	86	1	71	75	5	88	74
Extracted ISTD d_5 *N EtFOSA*	%		Org-035	87	1	72	76	5	86	72
Extracted ISTD d_7 *N MeFOSE*	%		Org-035	94	1	105	120	13	91	104
Extracted ISTD d_9 *N EtFOSE*	%		Org-035	89	1	105	114	8	84	101
Extracted ISTD d_3 *N MeFOSAA*	%		Org-035	97	1	79	85	7	95	83

QUALITY CONTROL: PFAS in Waters Extended						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	204219-1
Extracted ISTD d_5 *N EtFOSAA*	%		Org-035	87	1	75	73	3	91	72

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

SAMPLE CHAIN OF CUSTODY DOCUMENTATION

Project No:	1791865	Lab Name:	ELS
Site Location:	Waterloo	Quote No.	
Sampled By:	Philippe Koenig	Order No.:	
Turnaround Time	24hrs ☐ 36hrs ☐	48hrs ☐ 5 Days ☐	Standard ■ Date Required By:
Delivery Option	HARD ☐	FAX ☐ DISK ☐	EMAIL ■ BULLETIN BOARD
Report Format	PDF ■	EXCEL ■	ESDAT ■

GOLDER ASSOCIATES PTY LTD
124 Pacific Highway, Greenwich
Phone: : (02) 9478 3900
Fax : (02) 9478 3901
Project Manager: Barry Houston
Reviewed: Phil Koenig
Job Contact : Barry Houston
Rita Bonetti
Phone: 94783900 Email: bhouston@golder.com.au
rbonetti@golder.com.au

Comments/Special Instructions:
Please send deliverables to bhouston@golder.com.au & rbonetti@golder.com.au

Please note, the second canister was not used. Please do not analyse.

Thanks!

ANALYSIS REQUIRED

LAB ID	SAMPLE ID	CAN ID	SAMPLE DATE	SAMPLE PERIOD	CAN PRESSURE	Level of Contamination (Low/High/Unknown)	TO15	TRH (incl F1+F2)	Permanent Gases O2, CO2, He
1	SRT_QC200	1691 (636 flow reg.)	21/10/2018	12:27 - 12:47	-29 to -6	Un	X	X	X

ENVIROLAB
Environmental Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 203758
Date Received: 23/10/18
Time Received: 1600
Received By: DF
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None
Suitability: Acceptable/Unacceptable

SAMPLE MATRIX = Soil/Sediment/Fill/Water/Other

SAMPLE TYPE = Composite(C)/Discrete(DC)/Disturbed(DS)/Core(CR), Grab Sample (GS)

HIGH CONCENTRATION: circle expected parameters in analysis list

	SIGNATURE	COMPANY	DATE
RELEASED BY		Golder Associates	23/10/18
RECEIVED BY		ELS	23/10/18
RELEASED BY			
RECEIVED BY			

	SIGNATURE	COMPANY	DATE	TIME	Method of Shipment

To Be Filled Out By Analysing Laboratory

LAB. BATCH NUMBER

Security Seal		Chilled		Bill to:	
Suitable Containers		Frozen		Address	
Cool Box		Ambient			

THIS FORM IS TO BE SIGNED BY GOLDER STAFF; COURIER/S; LABORATORY ON RECEIPT OF SAMPLES.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Golder Associates Pty Ltd
Attention	Rita Bonetti, Barry Houston

Sample Login Details

Your reference	1791865, Waterloo
Envirolab Reference	203758
Date Sample Received	23/10/2018
Date Instructions Received	23/10/2018
Date Results Expected to be Reported	30/10/2018

Sample Condition

Samples received in appropriate condition for analysis	YES
No. of Samples Provided	1xAir
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	n/a
Cooling Method	Not applicable
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	TPH Air/ Air Phase Hydrocarbon	Permanent Gas analysis	TO15 in Canisters + ug/m3 calc
SRT_QC200	✓	✓	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 203758

Client Details

Client	Golder Associates Pty Ltd
Attention	Rita Bonetti, Barry Houston
Address	124 Pacific Highway, St Leonards, NSW, 2065

Sample Details

Your Reference	**1791865, Waterloo**
Number of Samples	1xAir
Date samples received	23/10/2018
Date completed instructions received	23/10/2018

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	30/10/2018
Date of Issue	29/10/2018

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Results Approved By
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Authorised By



Jacinta Hurst, Laboratory Manager

TPH Air/ Air Phase Hydrocarbon		
Our Reference		203758-1
Your Reference	UNITS	SRT_QC200
Date Sampled		21/10/2018
Type of sample		AIR
Air Kit Security No.		1691
Date prepared	-	24/10/2018
Date analysed	-	24/10/2018
TPH C_5 - C_8 Aliphatic	µg/m^3	860
TPH C_9 - C_{12} Aliphatic	µg/m^3	<50
TPH C_9 - C_{10} Aromatic	µg/m^3	<100
TPH C_6 - C_{10} - BTEX (F1)	µg/m^3	570
TPH >C_{10} - C_{12} - Naphthalene (F2)	µg/m^3	<40

Permanent Gas analysis		
Our Reference		203758-1
Your Reference	UNITS	SRT_QC200
Date Sampled		21/10/2018
Type of sample		AIR
Air Kit Security No.		1691
Date prepared	-	24/10/2018
Date analysed	-	24/10/2018
Carbon Dioxide (CO_2)	%	2.3
Oxygen (O_2)	%	13
Helium (He)	%	0.02

TO15 in Canisters/Bags		
Our Reference		203758-1
Your Reference	UNITS	SRT_QC200
Date Sampled		21/10/2018
Type of sample		AIR
Air Kit Security No.		1691
Vacuum before Shipment	Hg"	-30
Vacuum before Analysis	Hg"	-5
Date prepared	-	24/10/2018
Date analysed	-	24/10/2018
Propylene	ppbv	4
Dichlorodifluoromethane	ppbv	0.8
Chloromethane	ppbv	<0.5
1,2-Dichlorotetrafluoroethane	ppbv	<0.5
Vinyl chloride	ppbv	<0.5
1,3-Butadiene	ppbv	<0.5
Bromomethane	ppbv	<0.5
Chloroethane	ppbv	<0.5
Ethanol	ppbv	<5
Acrolein	ppbv	<0.5
Trichlorofluoromethane (Freon 11)	ppbv	20
Acetone	ppbv	10
Isopropyl Alcohol	ppbv	<5
1,1-Dichloroethene	ppbv	<0.5
1,1,2-Trichlorotrifluoroethane	ppbv	<0.5
Methylene chloride (Dichloromethane)	ppbv	<5
Carbon Disulfide	ppbv	6.8
trans-1,2-dichloroethene	ppbv	<0.5
MTBE	ppbv	<0.5
1,1- Dichloroethane	ppbv	<0.5
Vinyl Acetate	ppbv	<0.5
MEK	ppbv	<0.5
Hexane	ppbv	<0.5
cis-1,2-Dichloroethene	ppbv	<0.5
Ethyl Acetate	ppbv	<0.5
Chloroform	ppbv	21
Tetrahydrofuran	ppbv	<0.5
1,1,1-Trichloroethane	ppbv	1
1,2-Dichloroethane	ppbv	<0.5
Benzene	ppbv	<0.5
Carbon tetrachloride	ppbv	<0.5
Cyclohexane	ppbv	<0.5

TO15 in Canisters/Bags		
Our Reference		203758-1
Your Reference	UNITS	SRT_QC200
Date Sampled		21/10/2018
Type of sample		AIR
Air Kit Security No.		1691
Heptane	ppbv	<0.5
Trichloroethene	ppbv	<0.5
1,2-Dichloropropane	ppbv	<0.5
1,4-Dioxane	ppbv	<0.5
Bromodichloromethane	ppbv	<0.5
Methyl Methacrylate	ppbv	<0.5
MIBK	ppbv	<0.5
cis-1,3-Dichloropropene	ppbv	<0.5
trans-1,3-Dichloropropene	ppbv	<0.5
Toluene	ppbv	1
1,1,2-Trichloroethane	ppbv	<0.5
Methyl Butyl Ketone	ppbv	<0.5
Dibromochloromethane	ppbv	<0.5
Tetrachloroethene	ppbv	250
1,2-Dibromoethane	ppbv	<0.5
Chlorobenzene	ppbv	<0.5
Ethylbenzene	ppbv	<0.5
m-& p-Xylene	ppbv	<1
Styrene	ppbv	<0.5
o-Xylene	ppbv	<0.5
Bromoform	ppbv	<0.5
1,1,2,2-Tetrachloroethane	ppbv	<0.5
4-ethyl toluene	ppbv	<0.5
1,3,5-Trimethylbenzene	ppbv	<0.5
1,2,4-Trimethylbenzene	ppbv	<0.5
1,3-Dichlorobenzene	ppbv	<0.5
Benzyl chloride	ppbv	<0.5
1,4-Dichlorobenzene	ppbv	<0.5
1,2-Dichlorobenzene	ppbv	<0.5
1,2,4-Trichlorobenzene	ppbv	<0.5
Naphthalene	ppbv	<0.5
Hexachloro- 1,3-butadiene	ppbv	<0.5
Surrogate-Bromochloromethane	% rec	119
Surrogate -1,4-Difluorobenzene	% rec	125
Surrogate-Chlorobenzene-D5	% rec	104

TO15 in Canisters ug/m3		
Our Reference		203758-1
Your Reference	UNITS	SRT_QC200
Date Sampled		21/10/2018
Type of sample		AIR
Air Kit Security No.		1691
Vacuum before Shipment	Hg"	-30
Vacuum before Analysis	Hg"	-5
Date prepared	-	24/10/2018
Date analysed	-	24/10/2018
Propylene	µg/m³	7
Dichlorodifluoromethane	µg/m³	4
Chloromethane	µg/m³	<1
1,2-Dichlorotetrafluoroethane	µg/m³	<2.5
Vinyl chloride	µg/m³	<1.3
1,3-Butadiene	µg/m³	<1.1
Bromomethane	µg/m³	<1.9
Chloroethane	µg/m³	<1.3
Ethanol	µg/m³	<9.4
Acrolein	µg/m³	<1.1
Trichlorofluoromethane (Freon 11)	µg/m³	110
Acetone	µg/m³	30
Isopropyl Alcohol	µg/m³	<12.3
1,1-Dichloroethene	µg/m³	<2
1,1,2-Trichlorotrifluoroethane	µg/m³	<3.8
Methylene chloride (Dichloromethane)	µg/m³	<17.2
Carbon Disulfide	µg/m³	21
trans-1,2-dichloroethene	µg/m³	<2
MTBE	µg/m³	<1.8
1,1- Dichloroethane	µg/m³	<2
Vinyl Acetate	µg/m³	<1.8
MEK	µg/m³	<1.5
Hexane	µg/m³	<1.8
cis-1,2-Dichloroethene	µg/m³	<2
Ethyl Acetate	µg/m³	<1.8
Chloroform	µg/m³	100
Tetrahydrofuran	µg/m³	<1.5
1,1,1-Trichloroethane	µg/m³	7
1,2-Dichloroethane	µg/m³	<2
Benzene	µg/m³	<1.6
Carbon tetrachloride	µg/m³	<3.1
Cyclohexane	µg/m³	<1.7

TO15 in Canisters ug/m3		
Our Reference		203758-1
Your Reference	UNITS	SRT_QC200
Date Sampled		21/10/2018
Type of sample		AIR
Air Kit Security No.		1691
Heptane	µg/m³	<2
Trichloroethene	µg/m³	<2.7
1,2-Dichloropropane	µg/m³	<2.3
1,4-Dioxane	µg/m³	<1.8
Bromodichloromethane	µg/m³	<3.4
Methyl Methacrylate	µg/m³	<2
MIBK	µg/m³	<2
cis-1,3-Dichloropropene	µg/m³	<2.3
trans-1,3-Dichloropropene	µg/m³	<2.3
Toluene	µg/m³	4
1,1,2-Trichloroethane	µg/m³	<2.7
Methyl Butyl Ketone	µg/m³	<2
Dibromochloromethane	µg/m³	<1.6
Tetrachloroethene	µg/m³	1,700
1,2-Dibromoethane	µg/m³	<3.8
Chlorobenzene	µg/m³	<2.3
Ethylbenzene	µg/m³	<2.2
m-& p-Xylene	µg/m³	<4.3
Styrene	µg/m³	<2.1
o-Xylene	µg/m³	<2.2
Bromoform	µg/m³	<5.2
1,1,2,2-Tetrachloroethane	µg/m³	<3.4
4-ethyl toluene	µg/m³	<2.5
1,3,5-Trimethylbenzene	µg/m³	<2.5
1,2,4-Trimethylbenzene	µg/m³	<2.5
1,3-Dichlorobenzene	µg/m³	<3
Benzyl chloride	µg/m³	<2.6
1,4-Dichlorobenzene	µg/m³	<3
1,2-Dichlorobenzene	µg/m³	<3
1,2,4-Trichlorobenzene	µg/m³	<3.7
Naphthalene	µg/m³	<2.6
Hexachloro- 1,3-butadiene	µg/m³	<5.3
Surrogate-Bromochloromethane	% rec	119
Surrogate -1,4-Difluorobenzene	% rec	125
Surrogate-Chlorobenzene-D5	% rec	104

Method ID	Methodology Summary
AT-003	Gases determined by GC-FID/TCD using methods ASTM 1945, 1946 and USEPA 3C.
AT-005	Measurement of Air-Phase Petroleum Hydrocarbons and Ozone Precursors by GC/MS
TO15	USEPA TO15 - Analysis of VOC's in air following USEPA TO15 protocols
USEPA 18	Measurement of Gaseous Organic Compound Emissions by Gas Chromatography using USEPA m18.

QUALITY CONTROL: TPH Air/ Air Phase Hydrocarbon						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			24/10/2018	1	24/10/2018	24/10/2018		24/10/2018	[NT]
Date analysed	-			29/10/2018	1	24/10/2018	24/10/2018		29/10/2018	[NT]
TPH C_5 - C_8 Aliphatic	µg/m^3	200	AT-005	<200	1	860	820	5	115	[NT]
TPH C_9 - C_{12} Aliphatic	µg/m^3	50	AT-005	<50	1	<50	<50	0	[NT]	[NT]
TPH C_9 - C_{10} Aromatic	µg/m^3	100	AT-005	<100	1	<100	<100	0	102	[NT]
TPH C_6 - C_{10} - BTEX (F1)	µg/m^3	200	TO15	<200	1	570	560	2	108	[NT]
TPH >C_{10} - C_{12} - Naphthalene (F2)	µg/m^3	40	TO15	<40	1	<40	<40	0	102	[NT]

QUALITY CONTROL: Permanent Gas analysis						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			24/10/2018	1	24/10/2018	24/10/2018		24/10/2018	[NT]
Date analysed	-			24/10/2018	1	24/10/2018	24/10/2018		24/10/2018	[NT]
Carbon Dioxide (CO_2)	%	0.01	AT-003	<0.01	1	2.3	2.3	0	96	[NT]
Oxygen (O_2)	%	0.01	AT-003	<0.01	1	13	13	0	91	[NT]
Helium (He)	%	0.01	AT-003	<0.01	1	0.02	0.02	0	101	[NT]

QUALITY CONTROL: TO15 in Canisters/Bags						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Vacuum before Shipment	Hg"			[NT]	1	-30	-30	0	[NT]	[NT]
Vacuum before Analysis	Hg"			[NT]	1	-5	-5	0	[NT]	[NT]
Date prepared	-			24/10/2018	1	24/10/2018	24/10/2018		24/10/2018	[NT]
Date analysed	-			24/10/2018	1	24/10/2018	24/10/2018		24/10/2018	[NT]
Propylene	ppbv	0.5	TO15	<0.5	1	4	4	0	104	[NT]
Dichlorodifluoromethane	ppbv	0.5	TO15	<0.5	1	0.8	0.8	0	[NT]	[NT]
Chloromethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,2-Dichlorotetrafluoroethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Vinyl chloride	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,3-Butadiene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Bromomethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Chloroethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Ethanol	ppbv	5	TO15	<5	1	<5	<5	0	[NT]	[NT]
Acrolein	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Trichlorofluoromethane (Freon 11)	ppbv	0.5	TO15	<0.5	1	20	19	5	[NT]	[NT]
Acetone	ppbv	5	TO15	<5	1	10	10	0	[NT]	[NT]
Isopropyl Alcohol	ppbv	5	TO15	<5	1	<5	<5	0	[NT]	[NT]
1,1-Dichloroethene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,1,2-Trichlorotrifluoroethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Methylene chloride (Dichloromethane)	ppbv	5	TO15	<5	1	<5	<5	0	[NT]	[NT]
Carbon Disulfide	ppbv	0.5	TO15	<0.5	1	6.8	6.6	3	[NT]	[NT]
trans-1,2-dichloroethene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
MTBE	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,1- Dichloroethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Vinyl Acetate	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
MEK	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Hexane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	105	[NT]
cis-1,2-Dichloroethene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Ethyl Acetate	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Chloroform	ppbv	0.5	TO15	<0.5	1	21	20	5	[NT]	[NT]
Tetrahydrofuran	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,1,1-Trichloroethane	ppbv	0.5	TO15	<0.5	1	1	1	0	[NT]	[NT]
1,2-Dichloroethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Benzene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	114	[NT]
Carbon tetrachloride	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Cyclohexane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	106	[NT]
Heptane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	106	[NT]
Trichloroethene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]

QUALITY CONTROL: TO15 in Canisters/Bags						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
1,2-Dichloropropane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,4-Dioxane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Bromodichloromethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Methyl Methacrylate	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
MIBK	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
cis-1,3-Dichloropropene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
trans-1,3-Dichloropropene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Toluene	ppbv	0.5	TO15	<0.5	1	1	1	0	108	[NT]
1,1,2-Trichloroethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Methyl Butyl Ketone	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Dibromochloromethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Tetrachloroethene	ppbv	0.5	TO15	<0.5	1	250	240	4	[NT]	[NT]
1,2-Dibromoethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Chlorobenzene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	103	[NT]
m-& p-Xylene	ppbv	1	TO15	<1	1	<1	<1	0	100	[NT]
Styrene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	99	[NT]
o-Xylene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	102	[NT]
Bromoform	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,1,2,2-Tetrachloroethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
4-ethyl toluene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	94	[NT]
1,3,5-Trimethylbenzene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	97	[NT]
1,2,4-Trimethylbenzene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	98	[NT]
1,3-Dichlorobenzene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Benzyl chloride	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,4-Dichlorobenzene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,2-Dichlorobenzene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
1,2,4-Trichlorobenzene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Naphthalene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Hexachloro- 1,3-butadiene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Surrogate-Bromochloromethane	% rec		TO15	115	1	119	126	6	79.00	[NT]
Surrogate -1,4-Difluorobenzene	% rec		TO15	116	1	125	130	4	76.00	[NT]
Surrogate-Chlorobenzene-D5	% rec		TO15	110	1	104	109	5	73.00	[NT]

QUALITY CONTROL: TO15 in Canisters ug/m3					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	
Vacuum before Shipment	Hg"			[NT]	1	-30	-30	0	[NT]	[NT]
Vacuum before Analysis	Hg"			[NT]	1	-5	-5	0	[NT]	[NT]
Date prepared	-			24/10/2018	1	24/10/2018	24/10/2018		[NT]	[NT]
Date analysed	-			24/10/2018	1	24/10/2018	24/10/2018		[NT]	[NT]
Propylene	µg/m³	0.9	TO15	<0.9	1	7	7	0	[NT]	[NT]
Dichlorodifluoromethane	µg/m³	2.5	TO15	<2.5	1	4	4	0	[NT]	[NT]
Chloromethane	µg/m³	1.0	TO15	<1.0	1	<1	<1	0	[NT]	[NT]
1,2-Dichlorotetrafluoroethane	µg/m³	2.5	TO15	<2.5	1	<2.5	<2.5	0	[NT]	[NT]
Vinyl chloride	µg/m³	1.3	TO15	<1.3	1	<1.3	<1.3	0	[NT]	[NT]
1,3-Butadiene	µg/m³	1.1	TO15	<1.1	1	<1.1	<1.1	0	[NT]	[NT]
Bromomethane	µg/m³	1.9	TO15	<1.9	1	<1.9	<1.9	0	[NT]	[NT]
Chloroethane	µg/m³	1.3	TO15	<1.3	1	<1.3	<1.3	0	[NT]	[NT]
Ethanol	µg/m³	9	TO15	<9	1	<9.4	<9.4	0	[NT]	[NT]
Acrolein	µg/m³	1.1	TO15	<1.1	1	<1.1	<1.1	0	[NT]	[NT]
Trichlorofluoromethane (Freon 11)	µg/m³	2.8	TO15	<2.8	1	110	110	0	[NT]	[NT]
Acetone	µg/m³	11.9	TO15	<11.9	1	30	30	0	[NT]	[NT]
Isopropyl Alcohol	µg/m³	12	TO15	<12	1	<12.3	<12.3	0	[NT]	[NT]
1,1-Dichloroethene	µg/m³	2.0	TO15	<2.0	1	<2	<2	0	[NT]	[NT]
1,1,2-Trichlorotrifluoroethane	µg/m³	3.8	TO15	<3.8	1	<3.8	<3.8	0	[NT]	[NT]
Methylene chloride (Dichloromethane)	µg/m³	20	USEPA 18	<20	1	<17.2	<17.2	0	[NT]	[NT]
Carbon Disulfide	µg/m³	1.6	TO15	<1.6	1	21	21	0	[NT]	[NT]
trans-1,2-dichloroethene	µg/m³	2.0	TO15	<2.0	1	<2	<2	0	[NT]	[NT]
MTBE	µg/m³	1.8	TO15	<1.8	1	<1.8	<1.8	0	[NT]	[NT]
1,1- Dichloroethane	µg/m³	2.0	TO15	<2.0	1	<2	<2	0	[NT]	[NT]
Vinyl Acetate	µg/m³	1.8	TO15	<1.8	1	<1.8	<1.8	0	[NT]	[NT]
MEK	µg/m³	1.5	TO15	<1.5	1	<1.5	<1.5	0	[NT]	[NT]
Hexane	µg/m³	1.8	TO15	<1.8	1	<1.8	<1.8	0	[NT]	[NT]
cis-1,2-Dichloroethene	µg/m³	2.0	TO15	<2.0	1	<2	<2	0	[NT]	[NT]
Ethyl Acetate	µg/m³	1.8	TO15	<1.8	1	<1.8	<1.8	0	[NT]	[NT]
Chloroform	µg/m³	2.4	TO15	<2.4	1	100	98	2	[NT]	[NT]
Tetrahydrofuran	µg/m³	1.5	TO15	<1.5	1	<1.5	<1.5	0	[NT]	[NT]
1,1,1-Trichloroethane	µg/m³	2.7	TO15	<2.7	1	7	7	0	[NT]	[NT]
1,2-Dichloroethane	µg/m³	2.0	TO15	<2.0	1	<2	<2	0	[NT]	[NT]
Benzene	µg/m³	1.6	TO15	<1.6	1	<1.6	<1.6	0	[NT]	[NT]
Carbon tetrachloride	µg/m³	3.1	TO15	<3.1	1	<3.1	<3.1	0	[NT]	[NT]
Cyclohexane	µg/m³	1.7	TO15	<1.7	1	<1.7	<1.7	0	[NT]	[NT]
Heptane	µg/m³	2.0	TO15	<2.0	1	<2	<2	0	[NT]	[NT]
Trichloroethene	µg/m³	2.7	TO15	<2.7	1	<2.7	<2.7	0	[NT]	[NT]

QUALITY CONTROL: TO15 in Canisters ug/m3						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	
1,2-Dichloropropane	µg/m³	2.3	TO15	<2.3	1	<2.3	<2.3	0	[NT]	[NT]
1,4-Dioxane	µg/m³	1.8	TO15	<1.8	1	<1.8	<1.8	0	[NT]	[NT]
Bromodichloromethane	µg/m³	3.4	TO15	<3.4	1	<3.4	<3.4	0	[NT]	[NT]
Methyl Methacrylate	µg/m³	2.0	TO15	<2.0	1	<2	<2	0	[NT]	[NT]
MIBK	µg/m³	2.0	TO15	<2.0	1	<2	<2	0	[NT]	[NT]
cis-1,3-Dichloropropene	µg/m³	2.3	TO15	<2.3	1	<2.3	<2.3	0	[NT]	[NT]
trans-1,3-Dichloropropene	µg/m³	2.3	TO15	<2.3	1	<2.3	<2.3	0	[NT]	[NT]
Toluene	µg/m³	1.9	TO15	<1.9	1	4	4	0	[NT]	[NT]
1,1,2-Trichloroethane	µg/m³	2.7	TO15	<2.7	1	<2.7	<2.7	0	[NT]	[NT]
Methyl Butyl Ketone	µg/m³	2.0	TO15	<2.0	1	<2	<2	0	[NT]	[NT]
Dibromochloromethane	µg/m³	1.6	TO15	<1.6	1	<1.6	<1.6	0	[NT]	[NT]
Tetrachloroethene	µg/m³	3.4	TO15	<3.4	1	1700	1700	0	[NT]	[NT]
1,2-Dibromoethane	µg/m³	3.8	TO15	<3.8	1	<3.8	<3.8	0	[NT]	[NT]
Chlorobenzene	µg/m³	2.3	TO15	<2.3	1	<2.3	<2.3	0	[NT]	[NT]
Ethylbenzene	µg/m³	2.2	TO15	<2.2	1	<2.2	<2.2	0	[NT]	[NT]
m-& p-Xylene	µg/m³	4.3	TO15	<4.3	1	<4.3	<4.3	0	[NT]	[NT]
Styrene	µg/m³	2.1	TO15	<2.1	1	<2.1	<2.1	0	[NT]	[NT]
o-Xylene	µg/m³	2.2	TO15	<2.2	1	<2.2	<2.2	0	[NT]	[NT]
Bromoform	µg/m³	5.2	TO15	<5.2	1	<5.2	<5.2	0	[NT]	[NT]
1,1,2,2-Tetrachloroethane	µg/m³	3.4	TO15	<3.4	1	<3.4	<3.4	0	[NT]	[NT]
4-ethyl toluene	µg/m³	2.5	TO15	<2.5	1	<2.5	<2.5	0	[NT]	[NT]
1,3,5-Trimethylbenzene	µg/m³	2.5	TO15	<2.5	1	<2.5	<2.5	0	[NT]	[NT]
1,2,4-Trimethylbenzene	µg/m³	2.5	TO15	<2.5	1	<2.5	<2.5	0	[NT]	[NT]
1,3-Dichlorobenzene	µg/m³	3.0	TO15	<3.0	1	<3	<3	0	[NT]	[NT]
Benzyl chloride	µg/m³	2.6	TO15	<2.6	1	<2.6	<2.6	0	[NT]	[NT]
1,4-Dichlorobenzene	µg/m³	3.0	TO15	<3.0	1	<3	<3	0	[NT]	[NT]
1,2-Dichlorobenzene	µg/m³	3.0	TO15	<3.0	1	<3	<3	0	[NT]	[NT]
1,2,4-Trichlorobenzene	µg/m³	3.7	TO15	<3.7	1	<3.7	<3.7	0	[NT]	[NT]
Naphthalene	µg/m³	2.6	TO15	<2.6	1	<2.6	<2.6	0	[NT]	[NT]
Hexachloro- 1,3-butadiene	µg/m³	5.3	TO15	<5.3	1	<5.3	<5.3	0	[NT]	[NT]
Surrogate-Bromochloromethane	% rec		TO15	115	1	119	126	6	[NT]	[NT]
Surrogate -1,4-Difluorobenzene	% rec		TO15	116	1	125	99	23	[NT]	[NT]
Surrogate-Chlorobenzene-D5	% rec		TO15	110	1	104	109	5	[NT]	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

APPENDIX J1

Data Validations

GOLDER

DATA VALIDATION SUMMARY SHEET

Project Name:	**Sydney Metro - Waterloo Station**	**Project Number:**	**1791865**
Primary Laboratory:	**ALS Newcastle**	**Work order Number:**	**EN1807084**
Secondary Laboratory:	**Envirolab**	**Work order Number:**	**203758**
Date Sampled:	**21/10/2018**	**Sample Medium:**	**Soil Vapour**

Sample Information

Number of Primary Samples:	**6**	**Number of Triplicate Samples:**	**1**
Number of Duplicate Samples:	**1**	**Number of Other QAQC Samples:**	**-**

Documentation and Sample Handling Information

	Y/N	Comments
COC completed properly?	Yes	Signed by field staff and laboratory personnel.
All requested analysis completed?	Yes	All requested analyses on the COC performed by ALS & Envirolab.
Samples received intact and chilled?	Yes	ALS: Security seal intact, chilling not required Envirolab: Samples received in appropriate condition, chilling not required
Samples analysed within appropriate holding times?	Yes	All samples were analysed within appropriate holding times (ALS & Envirolab).
Sample volumes sufficient for QC analysis?	Yes	Sufficient sample volume provided for all other laboratory QC analyses (ALS & Envirolab)
Are there non-NATA accredited methods used?	No	ALS and Envirolab are NATA accredited for all methods used in this batch.
Chromatograms supplied as appropriate?	N/A	N/A.
Laboratory reports signed by authorised personnel?	Yes	All reports signed.

QAQC Sample Information (Method Blank - MB, Rinsate Blank - RB, Field Blank - FB, Trip Blank - TB)

Type	Sample ID	Comments
MB	Method Blank	All results were below the LOR (ALS & Envirolab)

Trip Spike Information

Analyte	Control Spike Concentrations	Trip Spike Concentration	% Recovery	Comments
Sample ID: No trip spike required for this analysis.				

Laboratory Control Spike (LCS) Analyses

Analyte Group	Comments
-	All laboratory control spike recoveries are within the laboratory based data quality objectives (ALS & Envirolab).

Matrix Spike (MS) Analyses

Analyte Group	Comments
-	No matrix spikes were required for this analysis (ALS & Envirolab).

Laboratory Duplicates (LD) Analyses

Analyte Group	Sample ID	Comments
-	-	All laboratory duplicate RPDs are within the laboratory based data quality objectives (ALS & Envirolab).

Field Duplicates (FD) Analyses

Analyte Group	Primary ID	Duplicate ID	Comments
-	SRT-BH415	QC100	All Field Duplicate are within the data quality objectives.

Field Triplicate (FT) Analysis

Analyte Group	Primary ID	Triplicate ID	Comments
-	SRT-BH415	QC200	All Field Triplicates are within the data quality objectives.

Surrogate Compound Monitoring Analyses

Analyte Group	Analyte(s)	Comments
-	-	All surrogate recoveries are within DQOs (ALS & Envirolab).

Overall Comments

This batch has been validated and is considered suitable for environmental interpretive use.

Note: Data validation assesses each analyte in terms of all the data validation variables and only the exceedances and outliers are reported in this form.

*When concentrations are less than the LOR for both primary and duplicate/triplicate results, no RPDs are calculated

Performed By:	**Tegen Anning**	**Checked By:**	**Rita Bonetti**
Date:	**9/11/2018**	**Date:**	**13/10/2018**

Project: Sydney Metro - Waterloo Station
Duplicate Analysis RPDs
Project No. : 1791865
Batch/es: EN1807084 / 203758

Sample ID	SRT-BH415	QC100	QC200
Sample Type	Primary	Field Duplicate	Field Triplicate
Date Sampled	21/10/2018	21/10/2018	21/10/2018

Analyte	Units	LOR				RPDs	
						Primary vs Duplicate	Primary vs Inter Duplicate
Other							
Helium	mg/m3	8	**17**	**16**	-	6.06%	-
Carbon Dioxide	mg/m3	90	**42,700**	**43,100**	-	0.93%	-
Carbon Monoxide	mg/m3	5	<10	<10	-	ND	-
Freon 113	mg/m3	0.38	<0.38	<0.38	<0.0038	ND	ND
Hydrogen	mg/m3	4	<8	<8	-	ND	-
Oxygen	mg/m3	1310	**173,000**	**175,000**	-	1.15%	-
Propene	mg/m3	0.09	<0.09	<0.09	**0.007**	ND	171.13%
Temp	oC	0.1	**21**	**21**	-	0.00%	-
TRH							
TRH C6 - C10 Fraction F1	mg/m3	20	<20	<20	-	ND	-
TRH C6 - C10 Fraction Less BTEX F1	mg/m3	20	<20	<20	**0.57**	ND	188.92%
TRH >C10 - C16 Fraction F2	mg/m3	40	<40	<40	-	ND	-
TRH >C10 - C16 Fraction Less Naphthalene (F2)	mg/m3	40	<40	<40	<0.04	ND	ND
TRH C6 - C9 Fraction	mg/m3	20	<20	<20	-	ND	-
TRH C10 - C14 Fraction	mg/m3	35	<35	<35	-	ND	-
BTEX							
Benzene	mg/m3	0.1	<0.1	<0.1	<0.0016	ND	ND
Toluene	mg/m3	0.19	<0.19	<0.19	**0.004**	ND	191.75%
Ethylbenzene	mg/m3	0.22	<0.22	<0.22	<0.0022	ND	ND
Xylenes (m & p)	mg/m3	0.43	<0.43	<0.43	<0.0043	ND	ND
Xylene (o)	mg/m3	0.22	<0.22	<0.22	<0.0022	ND	ND
Xylenes (Sum of total) (Lab Reported)	mg/m3	0.65	<0.65	<0.65	-	ND	-
PAH							
Naphthalene	mg/m3	0.1	<0.1	<0.1	<0.0026	ND	ND
TO15							
1,4-Dioxane	mg/m3	0.18	<0.18	<0.18	<0.0018	ND	ND
Cyclohexane	mg/m3	0.17	<0.17	<0.17	<0.0017	ND	ND
Ethyl Acetate	mg/m3	0.18	<0.18	<0.18	<0.0018	ND	ND
Heptane	mg/m3	0.2	<0.2	<0.2	<0.002	ND	ND
Hexane	mg/m3	0.18	<0.18	<0.18	<0.0018	ND	ND
2-Propanol	mg/m3	0.12	<0.12	<0.12	<0.0123	ND	ND
Tetrahydrofuran	mg/m3	0.15	<0.15	<0.15	<0.0015	ND	ND
1-Methyl-4 ethylbenzene	mg/m3	0.24	<0.24	<0.24	<0.0025	ND	ND
2,2,4 trimethylpentane	mg/m3	0.23	<0.23	<0.23	-	ND	-
Freon 114	mg/m3	0.35	<0.35	<0.35	<0.0025	ND	ND
1,4-Dichlorobenzene	mg/m3	0.3	<0.3	<0.3	<0.003	ND	ND
1,2,4-Trichlorobenzene	mg/m3	0.37	<0.37	<0.37	<0.0037	ND	ND
1,2-Dichlorobenzene	mg/m3	0.3	<0.3	<0.3	<0.003	ND	ND
1,3-Dichlorobenzene	mg/m3	0.3	<0.3	<0.3	<0.003	ND	ND
Chlorobenzene	mg/m3	0.23	<0.23	<0.23	<0.0023	ND	ND
1,2,4-trimethylbenzene	mg/m3	0.24	<0.24	<0.24	<0.0025	ND	ND
1,3,5-Trimethylbenzene	mg/m3	0.24	<0.24	<0.24	<0.0025	ND	ND
Styrene	mg/m3	0.21	<0.21	<0.21	<0.0021	ND	ND
Methyl Ethyl Ketone	mg/m3	0.15	<0.15	<0.15	<0.0015	ND	ND
2-Hexanone	mg/m3	0.2	<0.2	<0.2	<0.002	ND	ND
Methyl iso-butyl ketone	mg/m3	0.2	<0.2	<0.2	<0.002	ND	ND
Acetone	mg/m3	0.12	<0.12	<0.12	**0.03**	ND	120.00%
Methyl-t-butyl ether	mg/m3	0.18	<0.18	<0.18	<0.0018	ND	ND
Vinyl acetate	mg/m3	0.18	<0.18	<0.18	<0.0018	ND	ND
1,1,2,2-Tetrachloroethane	mg/m3	0.34	<0.34	<0.34	<0.0034	ND	ND
1,1,1-Trichloroethane	mg/m3	0.27	<0.27	<0.27	**0.007**	ND	189.89%
1,1,2-Trichloroethane	mg/m3	0.27	<0.27	<0.27	<0.0027	ND	ND
1,2-Dibromoethane	mg/m3	0.38	<0.38	<0.38	<0.0038	ND	ND
1,1-Dichloroethane	mg/m3	0.2	<0.2	<0.2	<0.002	ND	ND
1,2-Dichloroethane	mg/m3	0.2	<0.2	<0.2	<0.002	ND	ND
1,1-Dichloroethene	mg/m3	0.2	<0.2	<0.2	<0.002	ND	ND
cis-1,2-Dichloroethene	mg/m3	0.02	<0.02	<0.02	<0.002	ND	ND
trans-1,2-dichloroethene	mg/m3	0.2	<0.2	<0.2	<0.002	ND	ND
1,2-Dichloropropane	mg/m3	0.23	<0.23	<0.23	<0.0023	ND	ND
cis-1,3-Dichloropropene	mg/m3	0.23	<0.23	<0.23	<0.0023	ND	ND
trans-1,3-dichloropropene	mg/m3	0.23	<0.23	<0.23	<0.0023	ND	ND
1,3-Butadiene	mg/m3	0.11	<0.11	<0.11	<0.0011	ND	ND
Allyl chloride	mg/m3	0.16	<0.16	<0.16	-	ND	-
Benzyl chloride	mg/m3	0.26	<0.26	<0.26	<0.0026	ND	ND
Bromodichloromethane	mg/m3	0.34	<0.34	<0.34	<0.0034	ND	ND
Bromoform	mg/m3	0.52	<0.52	<0.52	<0.0052	ND	ND
Bromomethane	mg/m3	0.19	<0.19	<0.19	<0.0019	ND	ND
Carbon tetrachloride	mg/m3	0.31	<0.31	<0.31	<0.0031	ND	ND
Chlorodibromomethane	mg/m3	0.43	<0.43	<0.43	<0.0016	ND	ND
Chloroethane	mg/m3	0.13	<0.13	<0.13	<0.0013	ND	ND
Chloroform	mg/m3	0.24	<0.24	<0.24	**0.1**	ND	82.35%
Chloromethane	mg/m3	0.1	<0.1	<0.1	<0.001	ND	ND
Dichlorodifluoromethane	mg/m3	0.25	<0.25	<0.25	**0.004**	ND	193.70%
Dichloromethane	mg/m3	0.17	<0.17	<0.17	<0.0172	ND	ND
Hexachlorobutadiene	mg/m3	0.53	<0.53	<0.53	<0.0053	ND	ND
Trichloroethene	mg/m3	0.005	<0.005	<0.005	<0.0027	ND	ND
Tetrachloroethene	mg/m3	0.34	**2.51**	**2.52**	**1.7**	0.40%	38.48%
Trichlorofluoromethane	mg/m3	0.28	<0.28	<0.28	**0.11**	ND	87.18%
Vinyl bromide (bromoethene)	mg/m3	0.22	<0.22	<0.22	-	ND	-
Vinyl chloride	mg/m3	0.0051	<0.0051	<0.0051	<0.0013	ND	ND

Legend
ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)
- = Not analysed/calculated
Indicates RPD result does not meet the acceptable criteria
Acceptable RPDs: RPD <= 30%
RPD > 30%, Analysis result < 10 times LOR
RPD <= 50%, Analysis result > 10 times LOR and < 20 times LOR

GOLDER

DATA VALIDATION SUMMARY SHEET

Project Name:	**Sydney Metro - Waterloo Station**	**Project Number:**	**1791865**
Primary Laboratory:	**ALS Sydney**	**Work order Number:**	**ES1829955**
Secondary Laboratory:	**Envirolab**	**Work order Number:**	**202499**
Subcontractor Laboratory:	**ALS Newcastle (asbestos)**	**Work order Number:**	**ES1829955**
Subcontractor Laboratory:	**ALS Brisbane (SPOCAS)**	**Work order Number:**	**ES1829955**
Date Sampled:	**6/10/2018 & 7/10/2018**	**Sample Medium:**	**Soil**

Sample Information

Number of Primary Samples:	**53**	**Number of Triplicate Samples:**	**3**
Number of Duplicate Samples:	**3**	**Number of Other QAQC Samples:**	**6**

Documentation and Sample Handling Information

	Y/N	Comments
COC completed properly?	Yes	Signed by field staff and laboratory personnel.
All requested analysis completed?	Yes	All requested analyses on the COC performed by ALS & Envirolab.
Samples received intact and chilled?	Yes	ALS: 2.8'C, ice present, security seal intact. Envirolab: 9.2'C, ice present.
Samples analysed within appropriate holding times?	No	ALS: Samples SRT-BH420-3.0, SRT-BH420-4.0-4.45 and SRT-BH420-5.5-5.95 were analysed 9 days overdue for SPOCAS. It is noted that samples were collected on 6 Oct 2018 and frozen by the laboratory on receipt on 10 Oct 2018. All other samples were analysed within appropriate holding times (ALS & Envirolab).
Sample volumes sufficient for QC analysis?	No	ALS: Insufficient sample volume for laboratory duplicates and matrix spikes for PAH/Phenols, Pesticides by GCMS, Polychlorinated Biphenyls and TRH - semi volatile fraction in water and laboratory duplicates for moisture content in soil. *Refer to overall comments.* Sufficient sample volume provided for all other laboratory QC analyses. Envirolab: Sufficient sample volume provided for laboratory tests.
Are there non-NATA accredited methods used?	Yes	EA200N - Asbestos Quantification (ALS).
Chromatograms supplied as appropriate?	N/A	N/A.
Laboratory reports signed by authorised personnel?	Yes	All reports signed.

QAQC Sample Information (Method Blank - MB, Rinsate Blank - RB, Field Blank - FB, Trip Blank - TB)

Type	Sample ID	Comments
MB	Method Blank	All results were below the LOR (ALS & Envirolab)
TB	TB100	All results were below the LOR
TB	Trip Blank	All results were below the LOR
RB	RB100	All other results were below LOR with the exception of TRH C6-C9 Fraction (20 µg/L). *Refer to overall comments.*
RB	RB103	All results were below the LOR

Trip Spike Information

Analyte	Control Spike Concentrations	Trip Spike Concentration	% Recovery	Comments
Sample ID: TS100				
C6-C9 Fraction	18	18	100%	Result is within data quality objectives (70%-130%).
C6 - C10 Fraction	21	21	100%	Result is within data quality objectives (70%-130%).
Benzene	<0.2	<0.2	NA	
Toluene	4.3	4.3	100%	Result is within data quality objectives (70%-130%).
Ethylbenzene	0.6	0.6	100%	Result is within data quality objectives (70%-130%).
m/p-xylene	3.1	3.2	103%	Result is within data quality objectives (70%-130%).
o-xylene	1.4	1.4	100%	Result is within data quality objectives (70%-130%).
Naphthalene	<1	<1	NA	
Sample ID: Trip Spike 8				
C6-C9 Fraction	34	25	74%	Result is within data quality objectives (70%-130%).
C6 - C10 Fraction	40	29	73%	Result is within data quality objectives (70%-130%).
Benzene	<0.2	<0.2	NA	
Toluene	8.3	5.9	71%	Result is within data quality objectives (70%-130%).
Ethylbenzene	1.2	0.9	100%	Result is within data quality objectives (70%-130%).
m/p-xylene	5.8	4.4	76%	Result is within data quality objectives (70%-130%).
o-xylene	2.4	1.9	79%	Result is within data quality objectives (70%-130%).
Naphthalene	<1	<1	NA	

Laboratory Control Spike (LCS) Analyses

Analyte Group	Comments
-	All laboratory control spike recoveries are within the laboratory based data quality objectives (ALS & Envirolab).

Matrix Spike (MS) Analyses

Analyte Group	Comments
Total Metals by ICP-AES	ALS: The matrix spike recovery for zinc (144%) in sample ES1829955--001 (SRT-BH420-0.5) is outside of acceptable data quality objectives (70-130%). *Refer to overall comments.*
-	All other matrix spike recoveries are within the laboratory based data quality objectives (ALS & Envirolab).

Laboratory Duplicates (LD) Analyses

Analyte Group	Sample ID	Comments
Total Metals by ICP-AES	ES1829955--001 (SRT-BH420-0.5)	ALS: The laboratory duplicate RPD for copper (48.2%) is outside the laboratory based data quality objectives (0-20%). *Refer to overall comments.*
Total Metals by ICP-AES	ES1829955--060 (SRT_BH422_1.5)	ALS: The laboratory duplicate RPDs for lead (100.0%) and zinc (20.2%)were outside the laboratory based data quality objectives (0-20%). *Refer to overall comments.*
Polynuclear Aromatic Hydrocarbons	ES1829955--058 (SRT_BH422_0.5)	ALS: The laboratory duplicate RPD for the sum of polycyclic aromatic hydrocarbons (47.1%) was outside the laboratory based data quality objectives (0-20%). *Refer to overall comments.*
-	-	All other laboratory duplicate RPDs are within the laboratory based data quality objectives (ALS & Envirolab).

Field Duplicates (FD) Analyses

Analyte Group	Primary ID	Duplicate ID	Comments
-	SRT-BH409_0.5	QCA101	All field duplicate RPDs are within data quality objectives.
-	SRT-BH421_0.5	QCA102	All field duplicate RPDs are within data quality objectives.
PAHs	SRT-BH422_1.0	QCA103	The field duplicate RPD for Sum of Common 16 PAHs (111.11%) is outside the DQOs. All other field duplicates RPDs are within data quality objectives.

Field Triplicate (FT) Analysis

Analyte Group	Primary ID	Triplicate ID	Comments
-	SRT-BH409_0.5	QCB101	All field triplicate RPDs are within the data quality objectives.
-	SRT-BH421_0.5	QCB102	All field triplicate RPDs are within the data quality objectives.
-	SRT-BH422_1.0	QCB103	All field triplicate RPDs are within the data quality objectives.

Surrogate Compound Monitoring Analyses

Analyte Group	Analyte(s)	Comments
Phenolic Compound Surrogates	2-Chlorophenol-D4, 2.4.6-Tribromophenol	ALS: The surrogate recoveries of 2-Chlorophenol-D4 in sample SRT_BH412_0.5 (63.0%) and 2.4.6-Tribromophenol in samples SRT_BH412_0.5 (27%), and QCA102 (35%) are less than the lower data quality objective (60-122% and 40-138% respectively). *Refer to overall comments* .
		All other surrogate recoveries are within DQOs (ALS & Envirolab).

GOLDER

DATA VALIDATION SUMMARY SHEET

Project Name:	**Sydney Metro - Waterloo Station**	**Project Number:**	**1791865**
Primary Laboratory:	**ALS Sydney**	**Work order Number:**	**ES1829955**
Secondary Laboratory:	**Envirolab**	**Work order Number:**	**202499**
Subcontractor Laboratory:	**ALS Newcastle (asbestos)**	**Work order Number:**	**ES1829955**
Subcontractor Laboratory:	**ALS Brisbane (SPOCAS)**	**Work order Number:**	**ES1829955**
Date Sampled:	**6/10/2018 & 7/10/2018**	**Sample Medium:**	**Soil**

Overall Comments

ALS: The quality control frequency for PAH/Phenols, Pesticides by GCMS, Polychlorinated Biphenyls and TRH - semi volatile fraction in water were less than the specification for laboratory duplicates and matrix spikes. This is not expected to impact the integrity of the data as the only water samples submitted were a rinsate samples (quality control sample). The quality control frequency for moisture content in soil was not within specification for laboratory duplicates. This is not expected to affect the validity of this data as moisture content is not used for site assessment purposes.

Rinsate Blank (RB100) has a detection of TRH C6-C9 Fraction (20 µg/L) which is equal to the laboratory reporting limit. This is not expected to impact the validity of the dataset as the TRH C6-C9 Fraction results as the exceedance was marginal (i.e. the detection is equal to the laboratory reporting limit).

ALS: The matrix spike recovery for zinc (144%) was outside of acceptable data quality objectives in sample ES1829955--001 (SRT-BH420-0.5) indicating the potential for overreporting of this analyte. As stated by ALS: "Poor spike recovery was obtained for Zinc on sample ES1829955-1. Results have been confirmed by re-extraction and reanalysis." It is further noted that the sample was collected in fill material and therefore sample heterogeneity may be contributing to higher recoveries.

ALS: The laboratory duplicate recovery for copper (48.2%) in sample ES1829955--001 (SRT-BH420-0.5) is greater than acceptable data quality objectives. As stated by ALS: "Poor precision was obtained for Copper on sample ES1829955-1. Results have been confirmed by re-extraction and reanalysis." This is not expected to impact the validity of the dataset given that the sample was collected in fill material and therefore sample heterogeneity contributing to high RPDs is expected.

ALS: The laboratory duplicate recoveries for lead (100%) and zinc (20.2%) in sample EES1829955--060 (SRT_BH422_1.5) are greater than acceptable data quality objectives. As stated by ALS "Poor precision was obtained for Lead and Zinc on sample ES1829955-60. Results have been confirmed by re-extraction and reanalysis".

ALS: The laboratory duplicate recovery for sum of polycyclic aromatic hydrocarbons (47.1%) in sample EES1829955--058 (SRT_BH422_0.5) is greater than acceptable data quality objectives. The exceedance may be due to the small laboratory sub-sample size as the sample was collected from natural material which is generally expected to be homogenous.

The field duplicate RPD for Sum of Common 16 PAHs (111.11%) is outside the acceptable DQOs. It is noted that individual PAH analytes were within the acceptable DQOs, therefore this exceedance is unlikely to significantly impact the overall integrity of the dataset. It is further noted that the exceedance may be due to the small laboratory sub-sample size as the sample was collected from natural material which is generally expected to be homogenous.

ALS: The surrogate recovery for 2-Chlorophenol-D4 (66%) in sample SRT_BH412_0.1 is less than the lower data quality objective. This is not expected to affect the validity of the dataset as exceedance was marginal (3%).

ALS: Surrogate recoveries for 2.4.6-Tribromophenol in samples SRT_BH412_0.5 (27%) and QCA102 (35%) are below data quality objectives indicating the potential for under-reporting. It is noted that the surrogate recoveries for phenol-d6 and 2-Chlorophenol-D4 (other phenolic compound surrogates) for samples SRT_BH412_0.5 and QCA102 were within the acceptable data quality objectives. It is further noted that field duplicate QCA102 correlated well with the primary and field triplicate samples where surrogate recoveries were within the acceptable limits.

This batch has been validated and is considered suitable for environmental interpretive use.

Note: Data validation assesses each analyte in terms of all the data validation variables and only the exceedances and outliers are reported in this form.

*When concentrations are less than the LOR for both primary and duplicate/triplicate results, no RPDs are calculated

Performed By:	**Tegen Anning**	**Checked By:**	**Rita Bonetti**
Date:	**12/11/2018**	**Date:**	**12/11/2018**

Project: Sydney Metro - Waterloo Station
Duplicate Analysis RPDs
Project No. : 1791865
Batch/es: ES1829955 & 202499

		Sample ID	SRT_BH409_0.5	QCA101	QCB101		
		Sample Type	Primary	Field Duplicate	Field Triplicate		
		Date Sampled	6/10/2018	6/10/2018	6/10/2018		
						RPDs	
Analyte	**Units**	**LOR**				Primary vs Duplicate	Primary vs Inter Duplicate
TRH - HSL							
TRH C6 - C10 Fraction F1	mg/kg	10	<10	<10	<25	ND	ND
TRH C6 - C10 Fraction Less BTEX F1	mg/kg	10	<10	<10	<25	ND	ND
TRH >C10 - C16 Fraction F2	mg/kg	50	<50	<50	<50	ND	ND
TRH >C10 - C16 Fraction Less Naphthalene (F2)	mg/kg	50	<50	<50	<50	ND	ND
TRH >C16 - C34 Fraction F3	mg/kg	100	<100	<100	<100	ND	ND
TRH >C34 - C40 Fraction F4	mg/kg	100	<100	<100	<100	ND	ND
TRH+C10 - C40 (Sum of total) (Lab Reported)	mg/kg	50	<50	<50	<50	ND	ND
TPH Group - Waste Classification							
TRH C6 - C9 Fraction	mg/kg	10	<10	<10	<25	ND	ND
TRH C10 - C14 Fraction	mg/kg	50	<50	<50	<50	ND	ND
TRH C15 - C28 Fraction	mg/kg	100	<100	<100	<100	ND	ND
TRH C29 - C36 Fraction	mg/kg	100	<100	<100	<100	ND	ND
TRH+C10 - C36 (Sum of total) (Lab Reported)	mg/kg	50	<50	<50	-	ND	-
BTEX							
Benzene	mg/kg	0.2	<0.2	<0.2	<0.2	ND	ND
Toluene	mg/kg	0.5	<0.5	<0.5	<0.5	ND	ND
Ethylbenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Xylenes (m & p)	mg/kg	0.5	<0.5	<0.5	<2	ND	ND
Xylene (o)	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Total BTEX	mg/kg	0.2	<0.2	<0.2	-	ND	-
Heavy Metals							
Arsenic	mg/kg	5	<5	<5	<4	ND	ND
Cadmium	mg/kg	1	<1	<1	<0.4	ND	ND
Chromium	mg/kg	2	<2	<2	<1	ND	ND
Copper	mg/kg	5	<5	<5	**4**	ND	22.22%
Lead	mg/kg	5	<5	<5	**8**	ND	46.15%
Mercury	mg/kg	0.1	<0.1	<0.1	<0.1	ND	ND
Nickel	mg/kg	2	<2	<2	<1	ND	ND
Zinc	mg/kg	5	<5	**5**	**16**	0.00%	104.76%
Organochlorine Pesticides							
a-BHC	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Aldrin	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Dieldrin	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Aldrin & Dieldrin (Sum of total) (Lab Reported)	mg/kg	0.05	<0.05	<0.05	-	ND	-
b-BHC	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
cis-Chlordane	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
trans-Chlordane	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Chlordane (Sum of total)	mg/kg	0.05	<0.05	<0.05	-	ND	-
d-BHC	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
DDD	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
DDE	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
DDT	mg/kg	0.2	<0.2	<0.2	<0.1	ND	ND
DDT+DDE+DDD (Sum of total) (Lab Reported)	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Endosulfan	mg/kg	0.05	<0.05	<0.05	-	ND	-
Endosulfan I	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Endosulfan II	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Endosulfan sulphate	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Endrin	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Endrin aldehyde	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Endrin ketone	mg/kg	0.05	<0.05	<0.05	-	ND	-
g-BHC	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Heptachlor	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Heptachlor epoxide	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Hexachlorobenzene	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Methoxychlor	mg/kg	0.2	<0.2	<0.2	<0.1	ND	ND
Organophosphorous Pesticides							
Azinphos-methyl	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Bromophos-ethyl	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Carbophenothion	mg/kg	0.05	<0.05	<0.05	-	ND	-
Chlorfenvinphos	mg/kg	0.05	<0.05	<0.05	-	ND	-
Chlorpyriphos	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Chlorpyriphos-methyl	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Demeton-s-methyl	mg/kg	0.05	<0.05	<0.05	-	ND	-
Diazinon	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Dichlorvos	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Dimethoate	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Ethion	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Fenamiphos	mg/kg	0.05	<0.05	<0.05	-	ND	-
Fenthion	mg/kg	0.05	<0.05	<0.05	-	ND	-
Malathion	mg/kg	0.05	<0.05	<0.05	<0.1	ND	ND
Parathion-methyl	mg/kg	0.2	<0.2	<0.2	-	ND	-
Monocrotophos	mg/kg	0.2	<0.2	<0.2	-	ND	-
Parathion	mg/kg	0.2	<0.2	<0.2	<0.1	ND	ND
Pirimphos-ethyl	mg/kg	0.05	<0.05	<0.05	-	ND	-
Prothiofos	mg/kg	0.05	<0.05	<0.05	-	ND	-
PAH							
Acenaphthene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Acenaphthylene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Anthracene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Benz(a)anthracene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Benzo(a)pyrene	mg/kg	0.5	<0.5	<0.5	<0.05	ND	ND
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5	<0.5	<0.5	<0.5	ND	ND
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5	0.6	0.6	<0.5	0.00%	18.18%
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5	1.2	1.2	<0.5	0.00%	82.35%
Benzo(b)&(j)fluoranthene	mg/kg	0.5	<0.5	<0.5	-	ND	-
Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	-	ND	-
Chrysene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Fluoranthene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Fluorene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND

Naphthalene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Phenanthrene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Pyrene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5	<0.5	<0.5	-	ND	-
Phenols							
Phenolics (Sum of total)	mg/kg	1	<1	<1	<5	ND	ND
Polychlorinated Biphenyls							
PCB (Sum of Total-Lab Reported)	mg/kg	0.1	<0.1	<0.1	<0.1	ND	ND
Volatile Organic Compounds							
1,4-Dichlorobenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
4-Chlorotoluene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,2,3-Trichlorobenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,2,4-Trichlorobenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,2-Dichlorobenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,3-Dichlorobenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
2-Chlorotoluene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Bromobenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Chlorobenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,2,4-trimethylbenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,3,5-Trimethylbenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Isopropylbenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
n-Butylbenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
n-Propylbenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
p-Isopropyltoluene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
sec-Butylbenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Styrene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
tert-Butylbenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Methyl Ethyl Ketone	mg/kg	5	<5	<5	-	ND	-
2-Hexanone	mg/kg	5	<5	<5	-	ND	-
Methyl iso-butyl ketone	mg/kg	5	<5	<5	-	ND	-
Vinyl acetate	mg/kg	5	<5	<5	-	ND	-
1,1,1,2-Tetrachloroethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,1,2,2-Tetrachloroethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,1,1-Trichloroethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,1,2-Trichloroethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,2,3-Trichloropropane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,2-Dibromo-3-chloropropane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,2-Dibromoethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,1-Dichloroethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,2-Dichloroethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,1-Dichloroethene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
cis-1,2-Dichloroethene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
trans-1,2-dichloroethene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,2-Dichloropropane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,3-Dichloropropane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
2,2-Dichloropropane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,1-Dichloropropene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
cis-1,3-Dichloropropene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
trans-1,3-dichloropropene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
cis-1,4-Dichloro-2-butene	mg/kg	0.5	<0.5	<0.5	-	ND	-
trans-1,4-Dichloro-2-butene	mg/kg	0.5	<0.5	<0.5	-	ND	-
Bromodichloromethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Bromoform	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Bromomethane	mg/kg	5	<5	<5	<1	ND	ND
Carbon disulfide	mg/kg	0.5	<0.5	<0.5	-	ND	-
Carbon tetrachloride	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Chlorodibromomethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Chloroethane	mg/kg	5	<5	<5	<1	ND	ND
Chloroform	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Chloromethane	mg/kg	5	<5	<5	<1	ND	ND
Dibromomethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Dichlorodifluoromethane	mg/kg	5	<5	<5	<1	ND	ND
Hexachlorobutadiene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Iodomethane	mg/kg	0.5	<0.5	<0.5	-	ND	-
Pentachloroethane	mg/kg	0.5	<0.5	<0.5	-	ND	-
Trichloroethene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Tetrachloroethene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Trichlorofluoromethane	mg/kg	5	<5	<5	<1	ND	ND
Vinyl chloride	mg/kg	5	<5	<5	<1	ND	ND

Legend

ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)

- = Not analysed/calculated

Indicates RPD result does not meet the acceptable criteria

Acceptable RPDs:

RPD <= 30%

RPD > 30%, Analysis result < 10 times LOR

RPD <= 50%, Analysis result > 10 times LOR and < 20 times LOR

Project: Sydney Metro - Waterloo Station
Duplicate Analysis RPDs
Project No. : 1791865
Batch/es: ES1829955 & 202499

						RPDs	
Sample ID			SRT_BH421_0.5	QCA102	QCB102		
Sample Type			Primary	Field Duplicate	Field Triplicate		
Date Sampled			6/10/2018	6/10/2018	6/10/2018		
Analyte	**Units**	**LOR**				Primary vs Duplicate	Primary vs Inter Duplicate
TRH - HSL							
TRH C6 - C10 Fraction F1	mg/kg	10	<10	<10	<25	ND	ND
TRH C6 - C10 Fraction Less BTEX F1	mg/kg	10	<10	<10	<25	ND	ND
TRH >C10 - C16 Fraction F2	mg/kg	50	<50	<50	<50	ND	ND
TRH >C10 - C16 Fraction Less Naphthalene (F2)	mg/kg	50	<50	<50	<50	ND	ND
TRH >C16 - C34 Fraction F3	mg/kg	100	**260**	**250**	**270**	3.92%	3.77%
TRH >C34 - C40 Fraction F4	mg/kg	100	**240**	**240**	**190**	0.00%	23.26%
TRH+C10 - C40 (Sum of total) (Lab Reported)	mg/kg	50	**500**	**490**	**470**	2.02%	6.19%
TPH Group - Waste Classification							
TRH C6 - C9 Fraction	mg/kg	10	<10	<10	<25	ND	ND
TRH C10 - C14 Fraction	mg/kg	50	<50	<50	<50	ND	ND
TRH C15 - C28 Fraction	mg/kg	100	**120**	**130**	**170**	8.00%	34.48%
TRH C29 - C36 Fraction	mg/kg	100	**200**	**200**	**170**	0.00%	16.22%
TRH+C10 - C36 (Sum of total) (Lab Reported)	mg/kg	50	**320**	**330**	-	3.08%	-
BTEX							
Benzene	mg/kg	0.2	<0.2	<0.2	<0.2	ND	ND
Toluene	mg/kg	0.5	<0.5	<0.5	<0.5	ND	ND
Ethylbenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Xylenes (m & p)	mg/kg	0.5	<0.5	<0.5	<2	ND	ND
Xylene (o)	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Total BTEX	mg/kg	0.2	<0.2	<0.2	-	ND	-
Heavy Metals							
Arsenic	mg/kg	5	<5	<5	<4	ND	ND
Cadmium	mg/kg	1	<1	<1	<0.4	ND	ND
Chromium	mg/kg	2	**12**	**9**	**10**	28.57%	18.18%
Copper	mg/kg	5	**20**	**19**	**28**	5.13%	33.33%
Lead	mg/kg	5	**22**	**23**	**16**	4.44%	31.58%
Mercury	mg/kg	0.1	<0.1	<0.1	<0.1	ND	ND
Nickel	mg/kg	2	**10**	**6**	**8**	50.00%	22.22%
Zinc	mg/kg	5	**48**	**53**	**36**	9.90%	28.57%
PAH							
Acenaphthene	mg/kg	0.5	<0.5	<0.5	0.1	ND	ND
Acenaphthylene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Anthracene	mg/kg	0.5	<0.5	0.6	0.3	18.18%	50.00%
Benz(a)anthracene	mg/kg	0.5	0.8	1	0.9	22.22%	11.76%
Benzo(a)pyrene	mg/kg	0.5	0.8	1	0.85	22.22%	6.06%
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5	1	1.2	1.1	18.18%	9.52%
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5	1.3	1.5	1.2	14.29%	8.00%
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5	1.6	1.8	1.2	11.76%	28.57%
Benzo(b)&(j)fluoranthene	mg/kg	0.5	0.8	1	-	22.22%	-
Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	0.5	ND	0.00%
Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	-	ND	-
Chrysene	mg/kg	0.5	0.8	1	0.9	22.22%	11.76%
Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Fluoranthene	mg/kg	0.5	2.2	2.6	2.1	16.67%	4.65%
Fluorene	mg/kg	0.5	<0.5	<0.5	0.2	ND	85.71%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.5	<0.5	0.4	ND	22.22%
Naphthalene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Phenanthrene	mg/kg	0.5	1.8	2	1.6	10.53%	11.76%
Pyrene	mg/kg	0.5	2.3	2.7	2	16.00%	13.95%
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5	9.5	11.9	-	22.43%	-

Legend
ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)
- = Not analysed/calculated
Indicates RPD result does not meet the acceptable criteria
Acceptable RPDs: RPD <= 30%
RPD > 30%, Analysis result < 10 times LOR
RPD <= 50%, Analysis result > 10 times LOR and < 20 times LOR

Project: Sydney Metro - Waterloo Station
Duplicate Analysis RPDs
Project No. : 1791865
Batch/es: ES1829955 & 202499

						RPDs	
Sample ID			SRT_BH422_1.0	QCA103	QCB103		
Sample Type			Primary	Field Duplicate	Field Triplicate		
Date Sampled			7/10/2018	7/10/2018	7/10/2018		
Analyte	**Units**	**LOR**				Primary vs Duplicate	Primary vs Inter Duplicate
TRH - HSL							
TRH C6 - C10 Fraction F1	mg/kg	10	<10	<10	<25	ND	ND
TRH C6 - C10 Fraction Less BTEX F1	mg/kg	10	<10	<10	<25	ND	ND
TRH >C10 - C16 Fraction F2	mg/kg	50	<50	<50	<50	ND	ND
TRH >C10 - C16 Fraction Less Naphthalene (F2)	mg/kg	50	<50	<50	<50	ND	ND
TRH >C16 - C34 Fraction F3	mg/kg	100	<100	<100	<100	ND	ND
TRH >C34 - C40 Fraction F4	mg/kg	100	<100	<100	<100	ND	ND
TRH+C10 - C40 (Sum of total) (Lab Reported)	mg/kg	50	<50	<50	<50	ND	ND
TPH Group - Waste Classification							
TRH C6 - C9 Fraction	mg/kg	10	<10	<10	<25	ND	ND
TRH C10 - C14 Fraction	mg/kg	50	<50	<50	<50	ND	ND
TRH C15 - C28 Fraction	mg/kg	100	<100	<100	<100	ND	ND
TRH C29 - C36 Fraction	mg/kg	100	<100	<100	<100	ND	ND
TRH+C10 - C36 (Sum of total) (Lab Reported)	mg/kg	50	<50	<50	-	ND	-
BTEX							
Benzene	mg/kg	0.2	<0.2	<0.2	<0.2	ND	ND
Toluene	mg/kg	0.5	<0.5	<0.5	<0.5	ND	ND
Ethylbenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Xylenes (m & p)	mg/kg	0.5	<0.5	<0.5	<2	ND	ND
Xylene (o)	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Total BTEX	mg/kg	0.2	<0.2	<0.2	-	ND	-
Heavy Metals							
Arsenic	mg/kg	5	<5	<5	<4	ND	ND
Cadmium	mg/kg	1	<1	<1	<0.4	ND	ND
Chromium	mg/kg	2	<2	<2	<1	ND	ND
Copper	mg/kg	5	<5	<5	**1**	ND	133.33%
Lead	mg/kg	5	**31**	<5	**7**	144.44%	126.32%
Mercury	mg/kg	0.1	<0.1	<0.1	<0.1	ND	ND
Nickel	mg/kg	2	<2	<2	<1	ND	ND
Zinc	mg/kg	5	**47**	**13**	**12**	113.33%	118.64%
PAH							
Acenaphthene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Acenaphthylene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Anthracene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Benz(a)anthracene	mg/kg	0.5	<0.5	0.6	<0.1	18.18%	ND
Benzo(a)pyrene	mg/kg	0.5	<0.5	0.6	0.06	18.18%	157.14%
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5	<0.5	0.7	<0.5	33.33%	ND
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5	0.6	1	<0.5	50.00%	18.18%
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5	1.2	1.3	<0.5	8.00%	82.35%
Benzo(b)&(j)fluoranthene	mg/kg	0.5	<0.5	0.6	-	18.18%	-
Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	-	ND	-
Chrysene	mg/kg	0.5	<0.5	0.5	<0.1	0.00%	ND
Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Fluoranthene	mg/kg	0.5	0.8	1.3	0.1	47.62%	155.56%
Fluorene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Naphthalene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Phenanthrene	mg/kg	0.5	<0.5	0.6	<0.1	18.18%	ND
Pyrene	mg/kg	0.5	0.8	1.4	0.1	54.55%	155.56%
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5	1.6	5.6	0.3	**111.11%**	136.84%

Legend
ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)
- = Not analysed/calculated
Indicates RPD result does not meet the acceptable criteria
Acceptable RPDs: RPD <= 30%
RPD > 30%, Analysis result < 10 times LOR
RPD <= 50%, Analysis result > 10 times LOR and < 20 times LOR

GOLDER

DATA VALIDATION SUMMARY SHEET

Project Name:	**Sydney Metro - Waterloo Station**	**Project Number:**	**1791865**
Primary Laboratory:	**ALS Sydney**	**Work order Number:**	**ES1830703**
Secondary Laboratory:	**Envirolab**	**Work order Number:**	**203393**
Subcontractor Laboratory:	**ALS Newcastle (asbestos)**	**Work order Number:**	**ES1830703**
Date Sampled:	**13-14/10/2018**	**Sample Medium:**	**Soil**

Sample Information

Number of Primary Samples:	**9**	**Number of Triplicate Samples:**	**1**
Number of Duplicate Samples:	**1**	**Number of Other QAQC Samples:**	**4**

Documentation and Sample Handling Information

	Y/N	Comments
COC completed properly?	Yes	Signed by field staff and laboratory personnel.
All requested analysis completed?	Yes	All requested analyses on the COC performed by ALS & Envirolab.
Samples received intact and chilled?	Yes	ALS: 2.8'C, ice present, security seal intact. Envirolab: 1.6'C, ice present.
Samples analysed within appropriate holding times?	Yes	All samples were analysed within appropriate holding times (ALS & Envirolab).
Sample volumes sufficient for QC analysis?	No	Envirolab: Sufficient sample volume provided for laboratory tests. Matrix spikes and laboratory duplicates not undertaken by Envirolab. *Refer to overall comments.* ALS: Insufficient sample volume for laboratory duplicates and matrix spikes for PAH/Phenols, Pesticides by GCMS, Polychlorinated Biphenyls and TRH - semi volatile fraction in water and laboratory duplicates for total mercury by FIMS in soil. Sufficient sample volume provided for all other laboratory QC analyses (ALS & Envirolab).
Are there non-NATA accredited methods used?	Yes	ALS is not NATA accredited for Asbestos Quantification including asbestos (fines and fibrous <7mm), asbestos (fines and fibrous FA+AF), asbestos containing material, asbestos containing material (as 15% asbestos in ACM >7mm), weight used for % calculation and fibrous asbestos >7mm. ALS is NATA accreditation for asbestos identification. ALS and Envirolab are NATA accredited for all other methods used in this batch.
Chromatograms supplied as appropriate?	N/A	N/A.
Laboratory reports signed by authorised personnel?	Yes	All reports signed.

QAQC Sample Information (Method Blank - MB, Rin sate Blank - RB, Field Blank - FB, Trip Blank - TB)

Type	Sample ID	Comments
MB	Method Blank	All results were below the LOR (ALS & Envirolab)
TB	TB104	All results were below the LOR
RB	RB104	All results were below the LOR
RB	RB105	All results were below the LOR

Trip Spike Information

Analyte	Control Spike Concentrations	Trip Spike Concentration	% Recovery	Comments
Sample ID: TS104				
C6-C9 Fraction	12	11	92%	Result is within data quality objectives (70%-130%).
C6 - C10 Fraction	16	15	94%	Result is within data quality objectives (70%-130%).
Benzene	<0.2	<0.2	100%	Result is within data quality objectives (70%-130%).
Toluene	3.8	3.4	89%	Result is within data quality objectives (70%-130%).
Ethylbenzene	<0.5	<0.5	100%	Result is within data quality objectives (70%-130%).
m/p-xylene	2.5	2.3	92%	Result is within data quality objectives (70%-130%).
o-xylene	1	0.9	90%	Result is within data quality objectives (70%-130%).
Naphthalene	<1	<1	100%	Result is within data quality objectives (70%-130%).

Laboratory Control Spike (LCS) Analyses

Analyte Group	Comments
-	All laboratory control spike recoveries are within the laboratory based data quality objectives (ALS & Envirolab).

Matrix Spike (MS) Analyses

Analyte Group	Comments
Total Phenol by Discrete Analyser	ALS: The matrix spike recovery for total phenols (55.5%) in sample ES1830700--001 (anonymous) was outside of acceptable data quality objectives (70-130%). *Refer to overall comments.*
Polynuclear Aromatic Hydrocarbons	ALS: The matrix spike recovery for pyrene (22.0%) in sample ES1830703--002 (SRT-BH414_0.4) was outside of acceptable data quality objectives (70-130%). *Refer to overall comments.*
-	ALS & Envirolab: All other matrix spike recoveries are within the laboratory based data quality objectives. No MS undertaken by Envirolab.

Laboratory Duplicates (LD) Analyses

Analyte Group	Sample ID	Comments
Polynuclear Aromatic Hydrocarbons	ES1830703--002 (SRT-BH414_0.4)	ALS: The laboratory duplicate RPD for phenanthrene (30.3%), Fluoranthene (33.7%), Pyrene (34.5%) and Sum of polycyclic aromatic hydrocarbons (38.4%) are outside the laboratory based data quality objectives (0-20%). *Refer to overall comments.*
-	-	ALS & Envirolab: All other laboratory duplicate RPDs are within the laboratory based data quality objectives. No LD's undertaken by Envirolab.

Field Duplicates (FD) Analyses

Analyte Group	Primary ID	Duplicate ID	Comments
-	SRT-BH419_1.0	SRT_QCA104	All Field Duplicates RPDs are within the data quality objectives.

Field Triplicates (FT) Analyses

Analyte Group	Primary ID	Triplicate ID	Comments
-	SRT-BH419_1.0	QCB104	All Field Triplicates RPDs are within the data quality objectives.

Surrogate Compound Monitoring Analyses

Analyte Group	Analyte(s)	Comments
-	-	All surrogate recoveries are within DQOs (ALS & Envirolab).

Overall Comments

Envirolab: No MS or LD's undertaken for all analytes. As stated by Envirolab: "Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria."

ALS: The quality control frequency for PAH/Phenols, Pesticides by GCMS, Polychlorinated Biphenyls and TRH - semi volatile fraction in water were less than the specification for laboratory duplicates and matrix spikes. This is not expected to impact the integrity of the data as the only water samples submitted were a rinsate samples (quality control sample). The quality control frequency for total mercury in soil was not within specification for laboratory duplicates. The actual rate of duplicate analysis (8.33%) was slightly lower than the target rate (10%) therefore this is not expected to impact the overall integrity of the dataset.

ALS: The matrix spike recovery for total phenols (55.5%) in sample ES1830700--001 (anonymous) is outside data quality objectives. This is not expected to impact the validity of the dataset given that the exceedance was from an anonymous sample (not part of this batch) and is therefore not representative of the project sample matrices.

ALS: The matrix spike recovery for pyrene was less than the lower data quality objectives in sample ES1830703--002 (SRT-BH414_0.4) indicating the potential for underreporting of this analyte. As stated by ALS: "Poor matrix spike recovery due to sample heterogeneity. Confirmed by re-extraction and re-analysis." It is noted that the sample was collected from fill material and as such sample heterogeneity is expected.

ALS: The laboratory duplicate recovery for phenanthrene (30.3%), Fluoranthene (33.7%), Pyrene (34.5%) and Sum of polycyclic aromatic hydrocarbons (38.4%) in sample ES1830703--002 (SRT-BH414_0.4) are greater than acceptable data quality objectives. This is not expected to impact the validity of the dataset given that the sample was collected in fill material and therefore sample heterogeneity contributing to high RPDs is expected. The high RPD may also be due to the size of the sub-sample used for analysis by the laboratory.

This batch has been validated and is considered suitable for environmental interpretive use.

Note: Data validation assesses each analyte in terms of all the data validation variables and only the exceedances and outliers are reported in this form.

*When concentrations are less than the LOR for both primary and duplicate/triplicate results, no RPDs are calculated

Performed By:	**Tegen Anning**	**Checked By:**	**Rita Bonetti**
Date:	**9/11/2018**	**Date:**	**12/11/2018**

Project: Sydney Metro - Waterloo Station
Duplicate Analysis RPDs
Project No. : 1791865
Batch/es: ES1830703 & 203393

			Sample ID	SRT_BH419_1.0	SRT_QCA104	QCB104		
			Sample Type	Primary	Field Duplicate	Field Triplicate		
			Date Sampled	13/10/2018	13/10/2018	13/10/2018		
							RPDs	
Analyte	**Units**	**LOR**					Primary vs Duplicate	Primary vs Inter Duplicate
Moisture	%	0.1		**14.3**	**13.5**	**12**	5.76%	17.49%
TRH - HSL								
TRH C6 - C10 Fraction F1	mg/kg	10		<10	<10	<25	ND	ND
TRH C6 - C10 Fraction Less BTEX F1	mg/kg	10		<10	<10	<25	ND	ND
TRH >C10 - C16 Fraction F2	mg/kg	50		<50	<50	<50	ND	ND
TRH >C10 - C16 Fraction Less Naphthalene (F2)	mg/kg	50		<50	<50	<50	ND	ND
TRH >C16 - C34 Fraction F3	mg/kg	100		<100	<100	<100	ND	ND
TRH >C34 - C40 Fraction F4	mg/kg	100		<100	<100	<100	ND	ND
TRH+C10 - C40 (Sum of total) (Lab Reported)	mg/kg	50		<50	<50	<50	ND	ND
TPH Group - Waste Classification								
TRH C6 - C9 Fraction	mg/kg	10		<10	<10	<25	ND	ND
TRH C10 - C14 Fraction	mg/kg	50		<50	<50	<50	ND	ND
TRH C15 - C28 Fraction	mg/kg	100		<100	<100	<100	ND	ND
TRH C29 - C36 Fraction	mg/kg	100		<100	<100	<100	ND	ND
TRH+C10 - C36 (Sum of total) (Lab Reported)	mg/kg	50		<50	<50	-	ND	-
BTEX								
Benzene	mg/kg	0.2		<0.2	<0.2	<0.2	ND	ND
Toluene	mg/kg	0.5		<0.5	<0.5	<0.5	ND	ND
Ethylbenzene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
Xylenes (m & p)	mg/kg	0.5		<0.5	<0.5	<2	ND	ND
Xylene (o)	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
Total BTEX	mg/kg	0.2		<0.2	<0.2	-	ND	-
Heavy Metals								
Arsenic	mg/kg	5		<5	<5	<4	ND	ND
Cadmium	mg/kg	1		<1	<1	<0.4	ND	ND
Chromium	mg/kg	2		**10**	**10**	**10**	0.00%	0.00%
Copper	mg/kg	5		**38**	**32**	**40**	17.14%	5.13%
Lead	mg/kg	5		**23**	**28**	**20**	19.61%	13.95%
Mercury	mg/kg	0.1		<0.1	<0.1	**0.1**	ND	0.00%
Nickel	mg/kg	2		**6**	**6**	**5**	0.00%	18.18%
Zinc	mg/kg	5		**64**	**65**	**63**	1.55%	1.57%
PAH								
Acenaphthene	mg/kg	0.5		<0.5	<0.5	<0.1	ND	ND
Acenaphthylene	mg/kg	0.5		<0.5	<0.5	<0.1	ND	ND
Anthracene	mg/kg	0.5		<0.5	<0.5	<0.1	ND	ND
Benz(a)anthracene	mg/kg	0.5		<0.5	<0.5	**0.2**	ND	85.71%
Benzo(a)pyrene	mg/kg	0.5		<0.5	<0.5	**0.1**	ND	133.33%
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5		<0.5	<0.5	<0.5	ND	ND
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5		**0.6**	**0.6**	<0.5	0.00%	18.18%
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5		**1.2**	**1.2**	<0.5	0.00%	82.35%
Benzo(b)&(j)fluoranthene	mg/kg	0.5		<0.5	<0.5	-	ND	-
Benzo(g,h,i)perylene	mg/kg	0.5		<0.5	<0.5	<0.1	ND	ND
Benzo(k)fluoranthene	mg/kg	0.5		<0.5	<0.5	-	ND	-
Chrysene	mg/kg	0.5		<0.5	<0.5	**0.1**	ND	133.33%
Dibenz(a,h)anthracene	mg/kg	0.5		<0.5	<0.5	<0.1	ND	ND
Fluoranthene	mg/kg	0.5		<0.5	<0.5	**0.3**	ND	50.00%
Fluorene	mg/kg	0.5		<0.5	<0.5	<0.1	ND	ND
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5		<0.5	<0.5	<0.1	ND	ND
Naphthalene	mg/kg	0.5		<0.5	<0.5	<0.1	ND	ND
Phenanthrene	mg/kg	0.5		<0.5	<0.5	**0.2**	ND	85.71%
Pyrene	mg/kg	0.5		<0.5	<0.5	**0.3**	ND	50.00%
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5		<0.5	<0.5	-	ND	-
1,4-Dichlorobenzene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
4-Chlorotoluene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
1,2,3-Trichlorobenzene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
1,2,4-Trichlorobenzene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
1,2-Dichlorobenzene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
1,3-Dichlorobenzene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
2-Chlorotoluene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
Bromobenzene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
Chlorobenzene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
1,2,4-trimethylbenzene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
1,3,5-Trimethylbenzene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
Isopropylbenzene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
n-Butylbenzene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
n-Propylbenzene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
p-Isopropyltoluene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
sec-Butylbenzene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
Styrene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
tert-Butylbenzene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
Methyl Ethyl Ketone	mg/kg	5		<5	<5	-	ND	-
2-Hexanone	mg/kg	5		<5	<5	-	ND	-
Methyl iso-butyl ketone	mg/kg	5		<5	<5	-	ND	-
Vinyl acetate	mg/kg	5		<5	<5	-	ND	-
1,1,1,2-Tetrachloroethane	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
1,1,2,2-Tetrachloroethane	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
1,1,1-Trichloroethane	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
1,1,2-Trichloroethane	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
1,2,3-Trichloropropane	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
1,2-Dibromo-3-chloropropane	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
1,2-Dibromoethane	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
1,1-Dichloroethane	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
1,2-Dichloroethane	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
1,1-Dichloroethene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
cis-1,2-Dichloroethene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
trans-1,2-dichloroethene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
1,2-Dichloropropane	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
1,3-Dichloropropane	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
2,2-Dichloropropane	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
1,1-Dichloropropene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
cis-1,3-Dichloropropene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
trans-1,3-dichloropropene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND

Created By: TA 30/10/2018
Checked By: RB 12/11/2018

cis-1,4-Dichloro-2-butene	mg/kg	0.5	<0.5	<0.5	-	ND	-
trans-1,4-Dichloro-2-butene	mg/kg	0.5	<0.5	<0.5	-	ND	-
Bromodichloromethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Bromoform	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Bromomethane	mg/kg	5	<5	<5	<1	ND	ND
Carbon disulfide	mg/kg	0.5	<0.5	<0.5	-	ND	-
Carbon tetrachloride	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Chlorodibromomethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Chloroethane	mg/kg	5	<5	<5	<1	ND	ND
Chloroform	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Chloromethane	mg/kg	5	<5	<5	<1	ND	ND
Dibromomethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Dichlorodifluoromethane	mg/kg	5	<5	<5	<1	ND	ND
Hexachlorobutadiene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Iodomethane	mg/kg	0.5	<0.5	<0.5	-	ND	-
Pentachloroethane	mg/kg	0.5	<0.5	<0.5	-	ND	-
Trichloroethene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Tetrachloroethene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Trichlorofluoromethane	mg/kg	5	<5	<5	<1	ND	ND
Vinyl chloride	mg/kg	5	<5	<5	<1	ND	ND

Legend

ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)

- = Not analysed/calculated

Indicates RPD result does not meet the acceptable criteria

Acceptable RPDs: RPD <= 30%

RPD > 30%, Analysis result < 10 times LOR

RPD <= 50%, Analysis result > 10 times LOR and < 20 times LOR

GOLDER

DATA VALIDATION SUMMARY SHEET

Project Name:	**Sydney Metro - Waterloo Station**	**Project Number:**	**1791865**
Primary Laboratory:	**ALS Sydney**	**Work order Number:**	**ES1831696**
Secondary Laboratory:	**Envirolab**	**Work order Number:**	**203759**
Subcontractor Laboratory:	**ALS Melbourne (Asbestos)**	**Work order Number:**	**ES1831696**
Subcontractor Laboratory:	**ALS Brisbane (SPOCAS)**	**Work order Number:**	**ES1831696**
Date Sampled:	**20/10/2018**	**Sample Medium:**	**Soil**

Sample Information

Number of Primary Samples:	**4**	**Number of Triplicate Samples:**	**1**
Number of Duplicate Samples:	**1**	**Number of Other QAQC Samples:**	**3**

Documentation and Sample Handling Information

	Y/N	Comments
COC completed properly?	Yes	Signed by field staff and laboratory personnel (ALS & Envirolab)
All requested analysis completed?	Yes	All requested analyses on the COC performed by ALS & Envirolab.
Samples received intact and chilled?	No	ALS: 3.2'C, ice present, security seal intact. Envirolab: 11.2 'C, ice pack. *Refer to overall comments.*
Samples analysed within appropriate holding times?	No	ALS: Sample SRT-TB106, SRT-TS106 and Trip Spike Control were analysed 1 days overdue for TPH, TRH - NEPM 2013 Fractions and BETXN. Sample SRT-QCA106 was analysed 6 days overdue for VOCs (vinyl chloride and styrene) and 2 days overdue for total phenols. *Refer to overall comments.* All other samples were analysed within appropriate holding times.
Sample volumes sufficient for QC analysis?	No	ALS: Insufficient sample volume for laboratory duplicates and matrix spikes for PAH/Phenols, Pesticides by GCMS, Polychlorinated Biphenyls and TRH - semi volatile fraction in water. Insufficient sample volume for laboratory duplicates for moisture in soil. *Refer to overall comments.* Envirolab: Sufficient sample volume provided for laboratory tests. Matrix spikes and laboratory duplicates not undertaken by Envirolab. *Refer to overall comments.* Sufficient sample volume provided for all other laboratory QC analyses (ALS & Envirolab).
Are there non-NATA accredited methods used?	Yes	ALS is not NATA accredited for Asbestos Quantification including asbestos (fines and fibrous <7mm), asbestos (fines and fibrous FA+AF), asbestos containing material, asbestos containing material (as 15% asbestos in ACM >7mm), weight used for % calculation and fibrous asbestos >7mm. ALS is NATA accreditation for asbestos identification. ALS and Envirolab are NATA accredited for all other methods used in this batch.
Chromatograms supplied as appropriate?	N/A	N/A.
Laboratory reports signed by authorised personnel?	Yes	All reports signed.

QAQC Sample Information (Method Blank - MB, Rinsate Blank - RB, Field Blank - FB, Trip Blank - TB)

Type	Sample ID	Comments
MB	Method Blank	All results were below the LOR (ALS & Envirolab).
TB	SRT_TB106	All results were below the LOR.
RB	SRT_RB106	All results were below the LOR.

Trip Spike Information

Analyte	Control Spike Concentrations	Trip Spike Concentration	% Recovery	Comments
Sample ID: SRT_TS106				
C6-C9 Fraction	31	17	55%	Result is outside of data quality objectives (70%-130%). *Refer to overall comments.*
C6 - C10 Fraction	40	23	58%	Result is outside of data quality objectives (70%-130%). *Refer to overall comments.*
Benzene	<0.2	<0.2	NA	
Toluene	8.9	4.2	47%	Result is outside of data quality objectives (70%-130%). *Refer to overall comments.*
Ethylbenzene	1.5	0.8	53%	Result is outside of data quality objectives (70%-130%). *Refer to overall comments.*
m/p-xylene	7.7	4.6	60%	Result is outside of data quality objectives (70%-130%). *Refer to overall comments.*
o-xylene	3.5	2.4	69%	Result is outside of data quality objectives (70%-130%). *Refer to overall comments.*
Naphthalene	<1	<1	NA	

Laboratory Control Spike (LCS) Analyses

Analyte Group	Comments
-	All laboratory control spike recoveries are within the laboratory based data quality objectives (ALS & Envirolab).

Matrix Spike (MS) Analyses

Analyte Group	Comments
-	ALS: All matrix spike recoveries are within the laboratory based data quality objectives.
	No MS undertaken by Envirolab.

Laboratory Duplicates (LD) Analyses

Analyte Group	Sample ID	Comments
-	-	ALS: All laboratory duplicate RPDs are within the laboratory based data quality objectives.
		No LD undertaken by Envirolab.

Field Duplicates (FD) Analyses

Analyte Group	Primary ID	Duplicate ID	Comments
-	SRT-BH415-0.5	SRT-QCA106	All Field Duplicates are within acceptable data quality objectives.

Field Triplicate (FT) Analysis

Analyte Group	Primary ID	Triplicate ID	Comments
-	SRT-BH415-0.5	SRT-QCB106	All Field Triplicates are within acceptable data quality objectives.

Surrogate Compound Monitoring Analyses

Analyte Group	Analyte(s)	Comments
Organophosphorus Pesticide Surrogate	DEF	ALS: The surrogate recoveries of DEF in water in sample SRT_RB106 (64.0%) are less than the lower data quality objective (67-111%). *Refer to overall comments .*
		All other surrogate recoveries are within DQOs (ALS & Envirolab).

Overall Comments

Envirolab: The sample receipt temperature reported by Envirolab, the secondary laboratory, was 11.2'C. The slightly elevated temperature is not expected to significantly impact the overall quality of the data as samples were placed on ice immediately following collection and field triplicate RPDs for SRT-QCB106 were within acceptable data quality objectives.

ALS holding time and trip spike recovery: SRT_TS106 was prepared by the primary lab (ALS) on the 15/10/18 and supplied on the 19/10/18. The trip spike was kept in a fridge prior to the sampling program and on ice during the sampling program with the samples taken. The soil samples were placed on ice immediately following collection on Saturday 20/10/2018, and kept on ice until they were placed in a refrigerator on the afternoon of the same day of sample collection. The samples were then sent to the laboratory on Monday 22/10/2018 and arrived at the laboratory at 3.2°C. The trip spike was analysed on Friday 30/10/18. The lower than expected recovery is likely to be due to the age of the trip spike, rather than inadequate sample preservation as the trip spike was kept in a fridge prior to the sampling program and on ice during the sampling program. Therefore, it is considered that loss of volatiles (if present in the soil samples) would be minimal despite poor trip spike recoveries.

ALS: Sample SRT-QCA106 was analysed 6 days overdue for VOCs (vinyl chloride and styrene) and 2 days overdue for total phenols. It is noted that there was good correlation between the field duplicate and primary sample (SRT-BH415-0.5). Therefore the holding time breach is unlikely to impact the assessment of site suitability.

Envirolab: No MS or LD's undertaken for all analytes. As stated by Envirolab: "Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria."

ALS: The quality control frequency for PAH/Phenols, Pesticides by GCMS, Polychlorinated Biphenyls and TRH - semi volatile fraction in water were less than the specification for laboratory duplicates and matrix spikes. This is not expected to impact the integrity of the data as the only water samples submitted were a rinsate samples (quality control sample). The quality control frequency for moisture in soil was not within specification for laboratory duplicates. The actual rate of duplicate analysis (9.09%) was slightly lower than the target rate (10%) therefore this is not expected to impact the overall integrity of the dataset. Furthermore, moisture is not used for the assessment of site suitability.

ALS: The surrogate recovery for DEF in sample SRT_RB106 was less than the lower data quality objective indicating the potential for under-reporting. This is not expected to affect the validity of the dataset as the exceedance was marginal (3.0%) and the exceedance was related to a rinsate sample (quality control sample).

This batch has been validated and is considered suitable for environmental interpretive use.

Note: Data validation assesses each analyte in terms of all the data validation variables and only the exceedances and outliers are reported in this form.
*When concentrations are less than the LOR for both primary and duplicate/triplicate results, no RPDs are calculated

Performed By:	**Tegen Anning**	**Checked By:**	**Rita Bonetti**
Date:	**2/11/2018**	**Date:**	**13/11/2018**

Project: Sydney Metro - Waterloo Station
Duplicate Analysis RPDs
Project No. : 1791865
Batch/es: ES1831696 / 203759

			Sample ID	SRT-BH415-0.5	QCA106	QCB106		
			Sample Type	Primary	Field Duplicate	Field Triplicate		
			Date Sampled	20/10/2018	20/10/2018	20/10/2018		
							RPDs	
Analyte	**Units**	**LOR**					Primary vs Duplicate	Primary vs Inter Duplicate
Moisture	%	0.1		**8.8**	**8.9**	**6.6**	1.13%	28.57%
TRH - HSL								
TRH C6 - C10 Fraction F1	mg/kg	10		<10	<10	<25	ND	ND
TRH C6 - C10 Fraction Less BTEX F1	mg/kg	10		<10	<10	<25	ND	ND
TRH >C10 - C16 Fraction F2	mg/kg	50		<50	<50	<50	ND	ND
TRH >C10 - C16 Fraction Less Naphthalene (F2)	mg/kg	50		<50	<50	<50	ND	ND
TRH >C16 - C34 Fraction F3	mg/kg	100		<100	<100	<100	ND	ND
TRH >C34 - C40 Fraction F4	mg/kg	100		<100	<100	<100	ND	ND
TRH+C10 - C40 (Sum of total) (Lab Reported)	mg/kg	50		<50	<50	<50	ND	ND
TPH Group - Waste Classification								
TRH C6 - C9 Fraction	mg/kg	10		<10	<10	<25	ND	ND
TRH C10 - C14 Fraction	mg/kg	50		<50	<50	<50	ND	ND
TRH C15 - C28 Fraction	mg/kg	100		<100	<100	<100	ND	ND
TRH C29 - C36 Fraction	mg/kg	100		<100	<100	<100	ND	ND
TRH+C10 - C36 (Sum of total) (Lab Reported)	mg/kg	50		<50	<50	-	ND	-
BTEX								
Benzene	mg/kg	0.2		<0.2	<0.2	<0.2	ND	ND
Toluene	mg/kg	0.5		<0.5	<0.5	<0.5	ND	ND
Ethylbenzene	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
Xylenes (m & p)	mg/kg	0.5		<0.5	<0.5	<2	ND	ND
Xylene (o)	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5		<0.5	<0.5	<1	ND	ND
Total BTEX	mg/kg	0.2		<0.2	<0.2	-	ND	-
Heavy Metals								
Arsenic	mg/kg	5		<5	<5	<4	ND	ND
Cadmium	mg/kg	1		<1	<1	<0.4	ND	ND
Chromium	mg/kg	2		7	7	7	0.00%	0.00%
Copper	mg/kg	5		<5	<5	5	ND	0.00%
Lead	mg/kg	5		16	14	19	13.33%	17.14%
Mercury	mg/kg	0.1		<0.1	<0.1	<0.1	ND	ND
Nickel	mg/kg	2		3	3	4	0.00%	28.57%
Zinc	mg/kg	5		20	21	21	4.88%	4.88%
Organochlorine Pesticides								
a-BHC	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Aldrin	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Dieldrin	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Aldrin & Dieldrin (Sum of total) (Lab Reported)	mg/kg	0.05		<0.05	<0.05	-	ND	-
b-BHC	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
cis-Chlordane	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
trans-Chlordane	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Chlordane (Sum of total)	mg/kg	0.05		<0.05	<0.05	-	ND	-
d-BHC	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
DDD	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
DDE	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
DDT	mg/kg	0.2		<0.2	<0.2	<0.1	ND	ND
DDT+DDE+DDD (Sum of total) (Lab Reported)	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Endosulfan	mg/kg	0.05		<0.05	<0.05	-	ND	-
Endosulfan I	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Endosulfan II	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Endosulfan sulphate	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Endrin	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Endrin aldehyde	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Endrin ketone	mg/kg	0.05		<0.05	<0.05	-	ND	-
g-BHC	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Heptachlor	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Heptachlor epoxide	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Hexachlorobenzene	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Methoxychlor	mg/kg	0.2		<0.2	<0.2	<0.1	ND	ND
Organophosphorous Pesticides								
Azinphos-methyl	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Bromophos-ethyl	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Carbophenothion	mg/kg	0.05		<0.05	<0.05	-	ND	-
Chlorfenvinphos	mg/kg	0.05		<0.05	<0.05	-	ND	-
Chlorpyriphos	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Chlorpyriphos-methyl	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Demeton-s-methyl	mg/kg	0.05		<0.05	<0.05	-	ND	-
Diazinon	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Dichlorvos	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Dimethoate	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Ethion	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Fenamiphos	mg/kg	0.05		<0.05	<0.05	-	ND	-
Fenthion	mg/kg	0.05		<0.05	<0.05	-	ND	-
Malathion	mg/kg	0.05		<0.05	<0.05	<0.1	ND	ND
Parathion-methyl	mg/kg	0.2		<0.2	<0.2	-	ND	-
Monocrotophos	mg/kg	0.2		<0.2	<0.2	-	ND	-
Parathion	mg/kg	0.2		<0.2	<0.2	<0.1	ND	ND
Pirimphos-ethyl	mg/kg	0.05		<0.05	<0.05	-	ND	-
Prothiofos	mg/kg	0.05		<0.05	<0.05	-	ND	-
PAH								
Acenaphthene	mg/kg	0.5		<0.5	<0.5	<0.1	ND	ND
Acenaphthylene	mg/kg	0.5		<0.5	<0.5	<0.1	ND	ND
Anthracene	mg/kg	0.5		<0.5	<0.5	<0.1	ND	ND
Benz(a)anthracene	mg/kg	0.5		<0.5	<0.5	<0.1	ND	ND
Benzo(a)pyrene	mg/kg	0.5		<0.5	<0.5	0.06	ND	157.14%
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5		<0.5	<0.5	<0.5	ND	ND
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5		0.6	0.6	<0.5	0.00%	18.18%
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5		1.2	1.2	<0.5	0.00%	82.35%
Benzo(b)&(j)fluoranthene	mg/kg	0.5		<0.5	<0.5	-	ND	-
Benzo(g,h,i)perylene	mg/kg	0.5		<0.5	<0.5	<0.1	ND	ND
Benzo(k)fluoranthene	mg/kg	0.5		<0.5	<0.5	-	ND	-
Chrysene	mg/kg	0.5		<0.5	<0.5	<0.1	ND	ND
Dibenz(a,h)anthracene	mg/kg	0.5		<0.5	<0.5	<0.1	ND	ND
Fluoranthene	mg/kg	0.5		<0.5	<0.5	0.1	ND	133.33%
Fluorene	mg/kg	0.5		<0.5	<0.5	<0.1	ND	ND

Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Naphthalene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Phenanthrene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Pyrene	mg/kg	0.5	<0.5	<0.5	0.1	ND	133.33%
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5	<0.5	<0.5	0.3	ND	50.00%
Phenols							
Phenolics (Sum of total)	mg/kg	1	<1	<1	<5	ND	ND
Polychlorinated Biphenyls							
PCB (Sum of Total-Lab Reported)	mg/kg	0.1	<0.1	<0.1	<0.1	ND	ND
Volatile Organic Compounds							
1,4-Dichlorobenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
4-Chlorotoluene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,2,3-Trichlorobenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,2,4-Trichlorobenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,2-Dichlorobenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,3-Dichlorobenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
2-Chlorotoluene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Bromobenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Chlorobenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,2,4-trimethylbenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,3,5-Trimethylbenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Isopropylbenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
n-Butylbenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
n-Propylbenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
p-Isopropyltoluene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
sec-Butylbenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Styrene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
tert-Butylbenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Methyl Ethyl Ketone	mg/kg	5	<5	<5	-	ND	-
2-Hexanone	mg/kg	5	<5	<5	-	ND	-
Methyl iso-butyl ketone	mg/kg	5	<5	<5	-	ND	-
Vinyl acetate	mg/kg	5	<5	<5	-	ND	-
1,1,1,2-Tetrachloroethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,1,2,2-Tetrachloroethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,1,1-Trichloroethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,1,2-Trichloroethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,2,3-Trichloropropane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,2-Dibromo-3-chloropropane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,2-Dibromoethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,1-Dichloroethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,2-Dichloroethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,1-Dichloroethene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
cis-1,2-Dichloroethene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
trans-1,2-dichloroethene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,2-Dichloropropane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,3-Dichloropropane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
2,2-Dichloropropane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
1,1-Dichloropropene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
cis-1,3-Dichloropropene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
trans-1,3-dichloropropene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
cis-1,4-Dichloro-2-butene	mg/kg	0.5	<0.5	<0.5	-	ND	-
trans-1,4-Dichloro-2-butene	mg/kg	0.5	<0.5	<0.5	-	ND	-
Bromodichloromethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Bromoform	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Bromomethane	mg/kg	5	<5	<5	<1	ND	ND
Carbon disulfide	mg/kg	0.5	<0.5	<0.5	-	ND	-
Carbon tetrachloride	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Chlorodibromomethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Chloroethane	mg/kg	5	<5	<5	<1	ND	ND
Chloroform	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Chloromethane	mg/kg	5	<5	<5	<1	ND	ND
Dibromomethane	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Dichlorodifluoromethane	mg/kg	5	<5	<5	<1	ND	ND
Hexachlorobutadiene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Iodomethane	mg/kg	0.5	<0.5	<0.5	-	ND	-
Pentachloroethane	mg/kg	0.5	<0.5	<0.5	-	ND	-
Trichloroethene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Tetrachloroethene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Trichlorofluoromethane	mg/kg	5	<5	<5	<1	ND	ND
Vinyl chloride	mg/kg	5	<5	<5	<1	ND	ND

Legend

ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)

- = Not analysed/calculated

Indicates RPD result does not meet the acceptable criteria

Acceptable RPDs:

RPD <= 30%

RPD > 30%, Analysis result < 10 times LOR

RPD <= 50%, Analysis result > 10 times LOR and < 20 times LOR

GOLDER

DATA VALIDATION SUMMARY SHEET

Project Name:	**Sydney Metro - Waterloo Station**	**Project Number:**	**1791865**
Primary Laboratory:	**ALS Sydney**	**Work order Number:**	**ES1832028 (Rebatch of ES1829955 & ES1830703)**
Secondary Laboratory:	**-**	**Work order Number:**	**-**
Date Sampled:	**06/10/2018 & 13/10/2018**	**Sample Medium:**	**Soil (TCLP)**

Sample Information

Number of Primary Samples:	**10**	**Number of Triplicate Samples:**	**0**
Number of Duplicate Samples:	**0**	**Number of Other QAQC Samples:**	**0**

Documentation and Sample Handling Information

	Y/N	Comments
COC completed properly?	Yes	Additional analysis requested electronically.
All requested analysis completed?	Yes	All requested analyses on the COC performed by ALS.
Samples received intact and chilled?	Yes	ALS: 4.1'C (samples held in storage at ALS).
Samples analysed within appropriate holding times?	No	ALS: Samples SRT-BH412-0.5 and SRT-BH422-0.5 were extracted 11 days overdue for non-volatile leach (i.e. semi-volatile organics) and samples SRT-BH414-0.4, SRT-BH423-0.5 and SRT-BH425-0.15 were extracted 4 days overdue for non-volatile leach (i.e. semi-volatile organics). *Refer to overall comments.* All other samples were analysed within appropriate holding times.
Sample volumes sufficient for QC analysis?	No	ALS: Insufficient sample volume for laboratory duplicates and matrix spikes for PAH/Phenols. *Refer to overall comments.* Sufficient sample volume provided for all other laboratory QC analyses.
Are there non-NATA accredited methods used?	No	ALS are NATA accredited for all methods used in this batch.
Chromatograms supplied as appropriate?	N/A	N/A.
Laboratory reports signed by authorised personnel?	Yes	All reports signed.

QAQC Sample Information (Method Blank - MB, Rinsate Blank - RB, Field Blank - FB, Trip Blank - TB)

Type	Sample ID	Comments
MB	Method Blank	All results were below the LOR..

Trip Spike Information

Analyte	Control Spike Concentrations	Trip Spike Concentration	% Recovery	Comments
No TS was analysed as part of this batch				

Laboratory Control Spike (LCS) Analyses

Analyte Group	Comments
-	All laboratory control spike recoveries are within the laboratory based data quality objectives.

Matrix Spike (MS) Analyses

Analyte Group	Comments
Leachable Metals by ICPAES	Matrix spike recovery for lead in sample ES1832028--003 (SRT-BH416-0.25) was not determined. *Refer to overall comments.*
-	All other matrix spike recoveries are within the laboratory based data quality objectives

Laboratory Duplicates (LD) Analyses

Analyte Group	Sample ID	Comments
-	-	All laboratory duplicate RPDs are within the laboratory based data quality objectives.

Field Duplicates (FD) Analyses

Analyte Group	Primary ID	Duplicate ID	Comments
-	-	-	No FD analysis was undertaken.

Field Triplicate (FT) Analysis

Analyte Group	Primary ID	Triplicate ID	Comments
-	-	-	No FT analysis was undertaken.

Surrogate Compound Monitoring Analyses

Analyte Group	Analyte(s)	Comments
All	-	All surrogate recoveries are within data quality objectives.

Overall Comments

This is a rebatch of ES1829955 & ES1830703, therefore field QAQC (TS, TB, RB) information and results are included in the data validations for the original batches.

ALS: A holding time breach for the extraction of non-volatile leach in sample SRT-BH412-0.5 and SRT-BH422-0.5 by 11 days and sample SRT-BH414-0.4, SRT-BH423-0.5 and SRT-BH425-0.15 by 4 days was reported. It is noted that the samples were appropriately stored by ALS and that TCLP data will be used to provide an indication of preliminary in-situ waste classification only and will not be used for the assessment of site suitability.

ALS: The quality control frequency for PAH/Phenols are less than the specification for laboratory duplicates and matrix spikes. It is noted that laboratory control spike recoveries, surrogate recovers and method blank analyses were within the laboratory based data quality objectives.

ALS: Matrix spike recovery for lead for sample ES1832028--003 (SRT-BH416-0.25) was not determined. As stated by ALS "MS recovery not determined, background level greater than or equal to 4x spike level."

This batch has been validated and is considered suitable for environmental interpretive use.

Note: Data validation assesses each analyte in terms of all the data validation variables and only the exceedances and outliers are reported in this form.

*When concentrations are less than the LOR for both primary and duplicate/triplicate results, no RPDs are calculated

Performed By:	**Bianca Underwood**	**Checked By:**	**Rita Bonetti**
Date:	**12/11/2018**	**Date:**	**14/11/2018**

GOLDER

DATA VALIDATION SUMMARY SHEET

Project Name:	**Sydney Metro - Waterloo Station**	**Project Number:**	**1791865**
Primary Laboratory:	**ALS Sydney**	**Work order Number:**	**ES1832159**
Secondary Laboratory:	**Envirolab**	**Work order Number:**	**204227**
Subcontractor Laboratory:	**ALS Newcastle (asbestos)**	**Work order Number:**	**ES1832159**
Subcontractor Laboratory:	**ALS Brisbane (SPOCAS)**	**Work order Number:**	**ES1832159**
Date Sampled:	**27-10-2018/28-10-2018**	**Sample Medium:**	**Soil**

Sample Information

Number of Primary Samples:	**16**	**Number of Triplicate Samples:**	**2**
Number of Duplicate Samples:	**2**	**Number of Other QAQC Samples:**	**4**

Documentation and Sample Handling Information

	Y/N	Comments
COC completed properly?	Yes	Signed by field staff and laboratory personnel (ALS & Envirolab)
All requested analysis completed?	Yes	All requested analyses on the COC performed by ALS & Envirolab.
Samples received intact and chilled?	No	ALS: 2.2'C, ice present, security seal intact. Envirolab: 12.3 'C, ice. *Refer to overall comments.*
Samples analysed within appropriate holding times?	Yes	All samples were analysed within appropriate holding times (ALS & Envirolab).
Sample volumes sufficient for QC analysis?	No	Envirolab: MS and LD only undertaken on metals. *Refer to overall comments.* Sufficient sample volume provided for all other laboratory QC analyses (ALS & Envirolab).
Are there non-NATA accredited methods used?	Yes	ALS is not NATA accredited for Asbestos Quantification parameters (EA200N). ALS and Envirolab are NATA accredited for all other methods used in this batch.
Chromatograms supplied as appropriate?	N/A	N/A.
Laboratory reports signed by authorised personnel?	Yes	All reports signed.

QAQC Sample Information (Method Blank - MB, Rinsate Blank - RB, Field Blank - FB, Trip Blank - TB)

Type	Sample ID	Comments
MB	Method Blank	All results were below the LOR (ALS & Envirolab).
TB	SRT-TB107	All results were below the LOR.
RB	SRT-RB107	All results were below the LOR.
RB	SRT-RB110	All results were below the LOR.

Trip Spike Information

Analyte	Control Spike Concentrations	Trip Spike Concentration	% Recovery	Comments
Sample ID: SRT-TS107				
C6-C9 Fraction	43	43	100%	Result is within data quality objectives (70%-130%).
C6 - C10 Fraction	57	58	102%	Result is within data quality objectives (70%-130%).
Benzene	0.2	<0.2	100%	Result is within data quality objectives (70%-130%).
Toluene	12.9	13	101%	Result is within data quality objectives (70%-130%).
Ethylbenzene	1.8	1.8	100%	Result is within data quality objectives (70%-130%).
m/p-xylene	9.4	9.5	101%	Result is within data quality objectives (70%-130%).
o-xylene	3.9	3.9	100%	Result is within data quality objectives (70%-130%).
Naphthalene	<1	<1	100%	Result is within data quality objectives (70%-130%).

Laboratory Control Spike (LCS) Analyses

Analyte Group	Comments
-	All laboratory control spike recoveries are within the laboratory based data quality objectives (ALS & Envirolab).

Matrix Spike (MS) Analyses

Analyte Group	Comments
Perfluoroalkyl Sulfonic Acids	ALS: Matrix spike recoveries for perfluorobutane sulfonic acid (PFBS), perfluorohexane sulfonic acid (PFHxS) and perfluorooctane sulfonic acid (PFOS) for sample EM1817408--010 (anonymous) were not determined. *Refer to overall comments.*
	ALS: Matrix spike recovery for perfluoroheptane sulfonic acid (PFHpS) (263%) for sample EM1817408--010 (anonymous) is greater than the upper control limit. *Refer to overall comments.*
Perfluoroalkyl Carboxylic Acids	ALS: Matrix spike recoveries for perfluoropentanoic acid (PFPeA), perfluorohexanoic acid (PFHxA), perfluorooctanoic acid (PFOA), perfluorononanoic acid (PFNA), perfluorodecanoic acid (PFDA) and perfluorododecanoic acid (PFDoDA) for sample EM1817408--010 (anonymous) were not determined. *Refer to overall comments.*
	ALS: Matrix spike recoveries for perfluorobutanoic acid (PFBA) (335%) and perfluorotridecanoic acid (PFTrDA) (205%) for sample EM1817408--010 (anonymous) were greater than the upper control limits. *Refer to overall comments.*
Fluorotelomer Sulfonic Acids	ALS: Matrix spike recoveries for 6:2 fluorotelomer sulfonic acid (6:2 FTS), 8:2 fluorotelomer sulfonic acid (8:2 FTS) and 10:2 fluorotelomer sulfonic acid (10:2 FTS) for sample EM1817408--010 (anonymous) were not determined. *Refer to overall comments.*
-	All other matrix spike recoveries are within the laboratory based data quality objectives (ALS & Envirolab).

Laboratory Duplicates (LD) Analyses

Analyte Group	Sample ID	Comments
Polynuclear Aromatic Hydrocarbons	ES1832159--020 (SRT-BH425-0.4)	ALS: Laboratory duplicate RPD recoveries for anthracene (21.6%), fluoranthene (26%), pyrene (26.7%), benz(a)anthracene (28.9%), chrysene (30.5%), benzo(b+j)fluoranthene (28.4%), benzo(k)fluoranthene (32.4%), benzo(a)pyrene (25.4%), indeno(1.2.3.cd)pyrene (21.07%), sum of polycyclic aromatic hydrocarbons (23.9%) and benzo(a)pyrene TEQ (zero) (25.7%) exceeded the data quality objectives. *Refer to overall comments.*
Perfluoroalkyl Carboxylic Acids	EM1817408--010 (Anonymous)	ALS: Laboratory duplicate RPD recovery for perfluorohexanoic acid (PFHxA) (24.1%) exceeds the data quality objectives. *Refer to overall comments* .
Acid Extractable metals in soil	SRT-QCB108	Envirolab: Laboratory duplicate recovery for lead (42%) exceeds the data quality objectives. *Refer to overall comments.*
-	-	All other laboratory duplicate RPDs are within the laboratory based data quality objectives (ALS & Envirolab).

Field Duplicates (FD) Analyses

Analyte Group	Primary ID	Duplicate ID	Comments
All	SRT-BH424-0.5	SRT-QCA108	All field duplicates are within acceptable data quality objectives.
Heavy Metals	SRT-BH418-1.0	SRT-QCA109	Field duplicate RPD recoveries for lead (192.16%) and zinc (177.78%) were outside the acceptable data quality objectives. *Refer to overall comments.*

Field Triplicate (FT) Analysis

Analyte Group	Primary ID	Triplicate ID	Comments
All	SRT-BH424-0.5	SRT-QCB108	All field triplicates are within acceptable data quality objectives.
All	SRT-BH418-1.0	SRT-QCB109	All field triplicates are within acceptable data quality objectives.

Surrogate Compound Monitoring Analyses

Analyte Group	Analyte(s)	Comments
Phenolic Compound Surrogates	2-chlorophenol-D4	ALS: The surrogate recovery for 2-chlorophenol-D4 (65.1%) in sample SRT-BH418-0.2 is less than the lower data quality objective (66-122%). *Refer to overall comments* .
Phenolic Compound Surrogates	2.4.6-tribromophenol	ALS: The surrogate recovery for 2.4.6-tribromophenol (24%) in sample SRT-BH418-0.2 is less than the lower data quality objective (40-138%). *Refer to overall comments* .
Phenolic Compound Surrogates	2.4.6-tribromophenol	ALS: The surrogate recovery for 2.4.6-tribromophenol (37.2%) in sample SRT-BH424-3.0 is less than the lower data quality objective (40-138%). *Refer to overall comments* .
-	-	All other surrogate recoveries are within acceptable data quality objectives (ALS & Envirolab).

Overall Comments

Envirolab: The sample receipt temperature reported by Envirolab was 12.3'C. The elevated temperature is not expected to significantly impact the overall quality of the data as samples were placed on ice immediately following collection and field triplicate RPDs were within acceptable data quality objectives.

As stated by Envirolab: Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

GOLDER

DATA VALIDATION SUMMARY SHEET

Project Name:	**Sydney Metro - Waterloo Station**	**Project Number:**	**1791865**
Primary Laboratory:	**ALS Sydney**	**Work order Number:**	**ES1832159**
Secondary Laboratory:	**Envirolab**	**Work order Number:**	**204227**
Subcontractor Laboratory:	**ALS Newcastle (asbestos)**	**Work order Number:**	**ES1832159**
Subcontractor Laboratory:	**ALS Brisbane (SPOCAS)**	**Work order Number:**	**ES1832159**
Date Sampled:	**27-10-2018/28-10-2018**	**Sample Medium:**	**Soil**

ALS: Matrix spike recoveries for Perfluorobutane sulfonic acid (PFBS), Perfluorohexane sulfonic acid (PFHxS), Perfluorooctane sulfonic acid (PFOS), Perfluoroheptane sulfonic acid (PFHpS), Perfluoropentanoic acid (PFPeA), Perfluorohexanoic acid (PFHxA), Perfluorooctanoic acid (PFOA), Perfluorononanoic acid (PFNA), Perfluorodecanoic acid (PFDA), Perfluorododecanoic acid (PFDoDA), Perfluorobutanoic acid (PFBA) (335%), Perfluorotridecanoic acid (PFTrDA) (205%), 6:2 Fluorotelomer sulfonic acid (6:2 FTS), 8:2 Fluorotelomer sulfonic acid (8:2 FTS) and 10:2 Fluorotelomer sulfonic acid (10:2 FTS) for sample EM1817408--010 (anonymous) were either greater than the upper control limit indicating potential over-reporting or not determined due to the background level being greater than or equal to 4x spike level. This is not expected to impact the validity of the dataset given that the exceedances were from an anonymous sample which is unlikely to be representative of the project sample matrices.

ALS: Laboratory duplicate RPD recoveries for anthracene (21.6%), fluoranthene (26%), pyrene (26.7%), benz(a)anthracene (28.9%), chrysene (30.5%), benzo(b+j)fluoranthene (28.4%), benzo(k)fluoranthene (32.4%), benzo(a)pyrene (25.4%), indeno(1.2.3.cd)pyrene (21.07%), sum of polycyclic aromatic hydrocarbons (23.9%) and benzo(a)pyrene TEQ (zero) (25.7%) for sample ES1832159--020 (SRT-BH425-0.4) exceeded the acceptable DQOs. As stated by ALS: "Poor duplicate precision due to sample heterogeneity. Confirmed by re-extraction and re-analysis". Sample heterogeneity is expected as the sample was collected in fill material, as such this is not expected to affect the validity of this data.

ALS: Laboratory duplicate RPD recovery for perfluorohexanoic acid (PFHxA) (24.1%) exceeded the acceptable DQOs. This is not expected to impact the validity of the dataset given that the exceedance was from an anonymous sample which is unlikely to be representative of the project sample matrices.

ALS: Field duplicate RPD recovery for lead (192.16%) and zinc (177.78%) were outside the acceptable data quality objectives. It is noted that the sample was collected form natural material and as such poor sample heterogenity is not expected. The highest concentration will be adopted for interpretive purposes.

ALS: The surrogate recovery for 2-chlorophenol-D4 (65.1%) in sample SRT-BH418-0.2 was less than the lower data quality objective indicating the potential for under-reporting. This is not expected to affect the validity of the dataset as the exceedance was marginal (0.9%).

ALS: The surrogate recovery for 2.4.6-tribromophenol (24%) in sample SRT-BH418-0.2 was less than the lower data quality objective indicating the potential for under-reporting.

ALS: The surrogate recovery for 2.4.6-tribromophenol (37.2%) in sample SRT-BH424-3.0 was less than the lower data quality objective. This is not expected to affect the validity of the dataset as the exceedance was marginal (2.8%).

As stated by ALS: EA200N: Asbestos weights and percentages are not covered under the Scope of NATA Accreditation. Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present). The Asbestos (Fines and Fibrous) weight is calculated from the extracted Fibrous Asbestos and Asbestos Fines as an equivalent weight of 100% Asbestos
Percentages for Asbestos content in ACM are based on the 2013 NEPM default values. All calculations of percentage Asbestos under this method are approximate and should be used as a guide only.

This batch has been validated and is considered suitable for environmental interpretive use.

Note: Data validation assesses each analyte in terms of all the data validation variables and only the exceedances and outliers are reported in this form.

*When concentrations are less than the LOR for both primary and duplicate/triplicate results, no RPDs are calculated

Performed By:	**Bianca Underwood**	**Checked By:**	**Rita Bonetti**
Date:	**12/11/2018**	**Date:**	**13/11/2018**

Project: Sydney Metro - Waterloo Station
Duplicate Analysis RPDs
Project No. : 1791865
Batch/es: ES1832159 / 204227

Sample ID	SRT-BH424-0.5	SRT-QCA108	SRT-QCB108
Sample Type	Primary	Field Duplicate	Field Triplicate
Date Sampled	27/10/2018	27/10/2018	27/10/2018

Analyte	Units	LOR				RPDs	
						Primary vs Duplicate	Primary vs Triplicate
EIL Parameters							
Moisture	%	0.1	10.3	11	12	**6.57%**	**15.25%**
TRH - HSL							
TRH C6 - C10 Fraction F1	mg/kg	10	<10	<10	<25	ND	ND
TRH C6 - C10 Fraction Less BTEX F1	mg/kg	10	<10	<10	<25	ND	ND
TRH >C10 - C16 Fraction F2	mg/kg	50	<50	<50	<50	ND	ND
TRH >C10 - C16 Fraction Less Naphthalene (F2)	mg/kg	50	<50	<50	<50	ND	ND
TRH >C16 - C34 Fraction F3	mg/kg	100	<100	<100	<100	ND	ND
TRH >C34 - C40 Fraction F4	mg/kg	100	<100	<100	<100	ND	ND
TRH+C10 - C40 (Sum of total) (Lab Reported)	mg/kg	50	<50	<50	<50	ND	ND
TPH Group - Waste Classification							
TRH C6 - C9 Fraction	mg/kg	10	<10	<10	<25	ND	ND
TRH C10 - C14 Fraction	mg/kg	50	<50	<50	<50	ND	ND
TRH C15 - C28 Fraction	mg/kg	100	<100	<100	<100	ND	ND
TRH C29 - C36 Fraction	mg/kg	100	<100	<100	<100	ND	ND
TRH+C10 - C36 (Sum of total) (Lab Reported)	mg/kg	50	<50	<50	-	ND	-
BTEX							
Benzene	mg/kg	0.2	<0.2	<0.2	<0.2	ND	ND
Toluene	mg/kg	0.5	<0.5	<0.5	<0.5	ND	ND
Ethylbenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Xylenes (m & p)	mg/kg	0.5	<0.5	<0.5	<2	ND	ND
Xylene (o)	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Total BTEX	mg/kg	0.2	<0.2	<0.2	-	ND	-
Heavy Metals							
Arsenic	mg/kg	5	<5	<5	<4	ND	ND
Cadmium	mg/kg	1	<1	<1	<0.4	ND	ND
Chromium	mg/kg	2	3	3	4	**0.00%**	**28.57%**
Copper	mg/kg	5	10	11	39	**9.52%**	**118.37%**
Lead	mg/kg	5	186	167	150	**10.76%**	**21.43%**
Mercury	mg/kg	0.1	0.2	0.2	0.3	**0.00%**	**40.00%**
Nickel	mg/kg	2	<2	<2	3	ND	**40.00%**
Zinc	mg/kg	5	75	66	51	**12.77%**	**38.10%**
Organochlorine Pesticides							
a-BHC	mg/kg	0.05	<0.05	-	<0.1	-	ND
Aldrin	mg/kg	0.05	<0.05	-	<0.1	-	ND
Dieldrin	mg/kg	0.05	<0.05	-	<0.1	-	ND
b-BHC	mg/kg	0.05	<0.05	-	<0.1	-	ND
cis-Chlordane	mg/kg	0.05	<0.05	-	<0.1	-	ND
trans-Chlordane	mg/kg	0.05	<0.05	-	<0.1	-	ND
d-BHC	mg/kg	0.05	<0.05	-	<0.1	-	ND
DDD	mg/kg	0.05	<0.05	-	<0.1	-	ND
DDE	mg/kg	0.05	<0.05	-	<0.1	-	ND
DDT	mg/kg	0.2	<0.2	-	<0.1	-	ND
DDT+DDE+DDD (Sum of total) (Lab Reported)	mg/kg	0.05	<0.05	-	<0.1	-	ND
Endosulfan I	mg/kg	0.05	<0.05	-	<0.1	-	ND
Endosulfan II	mg/kg	0.05	<0.05	-	<0.1	-	ND
Endosulfan sulphate	mg/kg	0.05	<0.05	-	<0.1	-	ND
Endrin	mg/kg	0.05	<0.05	-	<0.1	-	ND
Endrin aldehyde	mg/kg	0.05	<0.05	-	<0.1	-	ND
g-BHC	mg/kg	0.05	<0.05	-	<0.1	-	ND
Heptachlor	mg/kg	0.05	<0.05	-	<0.1	-	ND
Heptachlor epoxide	mg/kg	0.05	<0.05	-	<0.1	-	ND
Hexachlorobenzene	mg/kg	0.05	<0.05	-	<0.1	-	ND
Methoxychlor	mg/kg	0.2	<0.2	-	<0.1	-	ND
Organophosphorous Pesticides							
Azinphos-methyl	mg/kg	0.05	<0.05	-	<0.1	-	ND
Bromophos-ethyl	mg/kg	0.05	<0.05	-	<0.1	-	ND
Chlorpyriphos	mg/kg	0.05	<0.05	-	<0.1	-	ND
Chlorpyriphos-methyl	mg/kg	0.05	<0.05	-	<0.1	-	ND
Diazinon	mg/kg	0.05	<0.05	-	<0.1	-	ND
Dichlorvos	mg/kg	0.05	<0.05	-	<0.1	-	ND
Dimethoate	mg/kg	0.05	<0.05	-	<0.1	-	ND
Ethion	mg/kg	0.05	<0.05	-	<0.1	-	ND
Fenitrothion	mg/kg	0.1	-	-	<0.1	-	ND
Malathion	mg/kg	0.05	<0.05	-	<0.1	-	ND
Parathion	mg/kg	0.2	<0.2	-	<0.1	-	ND
Ronnel	mg/kg	0.1	-	-	<0.1	-	ND
PAH							
Acenaphthene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Acenaphthylene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Anthracene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Benz(a)anthracene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Benzo(a)pyrene	mg/kg	0.5	<0.5	<0.5	<0.05	ND	ND
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5	<0.5	<0.5	<0.5	ND	ND
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5	0.6	0.6	<0.5	**0.00%**	**18.18%**
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5	1.2	1.2	<0.5	**0.00%**	**82.35%**
Benzo(b)&(j)fluoranthene	mg/kg	0.5	<0.5	<0.5	-	ND	-
Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	-	ND	-
Chrysene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Fluoranthene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Fluorene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Naphthalene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Phenanthrene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Pyrene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5	<0.5	<0.5	<0.05	ND	-
Phenols							
Phenolics (Sum of total)	mg/kg	1	<1	-	<5	-	ND
Polychlorinated Biphenyls							
PCB (Sum of Total-Lab Reported)	mg/kg	0.1	<0.1	-	<0.1	-	ND
Volatile Organic Compounds							

Cyclohexane	mg/kg	1	-	-	<1	-	ND
1,4-Dichlorobenzene	mg/kg	0.5	<0.5	-	<1	-	ND
4-Chlorotoluene	mg/kg	0.5	<0.5	-	<1	-	ND
1,2,3-Trichlorobenzene	mg/kg	0.5	<0.5	-	<1	-	ND
1,2,4-Trichlorobenzene	mg/kg	0.5	<0.5	-	<1	-	ND
1,2-Dichlorobenzene	mg/kg	0.5	<0.5	-	<1	-	ND
1,3-Dichlorobenzene	mg/kg	0.5	<0.5	-	<1	-	ND
2-Chlorotoluene	mg/kg	0.5	<0.5	-	<1	-	ND
Bromobenzene	mg/kg	0.5	<0.5	-	<1	-	ND
Chlorobenzene	mg/kg	0.5	<0.5	-	<1	-	ND
1,2,4-trimethylbenzene	mg/kg	0.5	<0.5	-	<1	-	ND
1,3,5-Trimethylbenzene	mg/kg	0.5	<0.5	-	<1	-	ND
Isopropylbenzene	mg/kg	0.5	<0.5	-	<1	-	ND
n-Butylbenzene	mg/kg	0.5	<0.5	-	<1	-	ND
n-Propylbenzene	mg/kg	0.5	<0.5	-	<1	-	ND
p-Isopropyltoluene	mg/kg	0.5	<0.5	-	<1	-	ND
sec-Butylbenzene	mg/kg	0.5	<0.5	-	<1	-	ND
Styrene	mg/kg	0.5	<0.5	-	<1	-	ND
tert-Butylbenzene	mg/kg	0.5	<0.5	-	<1	-	ND
1,1,1,2-Tetrachloroethane	mg/kg	0.5	<0.5	-	<1	-	ND
1,1,2,2-Tetrachloroethane	mg/kg	0.5	<0.5	-	<1	-	ND
1,1,1-Trichloroethane	mg/kg	0.5	<0.5	-	<1	-	ND
1,1,2-Trichloroethane	mg/kg	0.5	<0.5	-	<1	-	ND
1,2,3-Trichloropropane	mg/kg	0.5	<0.5	-	<1	-	ND
1,2-Dibromo-3-chloropropane	mg/kg	0.5	<0.5	-	<1	-	ND
1,2-Dibromoethane	mg/kg	0.5	<0.5	-	<1	-	ND
1,1-Dichloroethane	mg/kg	0.5	<0.5	-	<1	-	ND
1,2-Dichloroethane	mg/kg	0.5	<0.5	-	<1	-	ND
1,1-Dichloroethene	mg/kg	0.5	<0.5	-	<1	-	ND
cis-1,2-Dichloroethene	mg/kg	0.5	<0.5	-	<1	-	ND
trans-1,2-dichloroethene	mg/kg	0.5	<0.5	-	<1	-	ND
1,2-Dichloropropane	mg/kg	0.5	<0.5	-	<1	-	ND
1,3-Dichloropropane	mg/kg	0.5	<0.5	-	<1	-	ND
2,2-Dichloropropane	mg/kg	0.5	<0.5	-	<1	-	ND
1,1-Dichloropropene	mg/kg	0.5	<0.5	-	<1	-	ND
cis-1,3-Dichloropropene	mg/kg	0.5	<0.5	-	<1	-	ND
trans-1,3-dichloropropene	mg/kg	0.5	<0.5	-	<1	-	ND
Bromochloromethane	mg/kg	1	-	-	<1	-	ND
Bromodichloromethane	mg/kg	0.5	<0.5	-	<1	-	ND
Bromoform	mg/kg	0.5	<0.5	-	<1	-	ND
Bromomethane	mg/kg	5	<5	-	<1	-	ND
Carbon tetrachloride	mg/kg	0.5	<0.5	-	<1	-	ND
Chlorodibromomethane	mg/kg	0.5	<0.5	-	<1	-	ND
Chloroethane	mg/kg	5	<5	-	<1	-	ND
Chloroform	mg/kg	0.5	<0.5	-	<1	-	ND
Chloromethane	mg/kg	5	<5	-	<1	-	ND
Dibromomethane	mg/kg	0.5	<0.5	-	<1	-	ND
Dichlorodifluoromethane	mg/kg	5	<5	-	<1	-	ND
Hexachlorobutadiene	mg/kg	0.5	<0.5	-	<1	-	ND
Trichloroethene	mg/kg	0.5	<0.5	-	<1	-	ND
Tetrachloroethene	mg/kg	0.5	<0.5	-	<1	-	ND
Trichlorofluoromethane	mg/kg	5	<5	-	<1	-	ND
Vinyl chloride	mg/kg	5	<5	-	<1	-	ND

Legend

ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)

- = Not analysed/calculated

Indicates RPD result does not meet the acceptable criteria

Acceptable RPDs: RPD <= 30%

RPD > 30%, Analysis result < 10 times LOR

RPD <= 50%, Analysis result > 10 times LOR and < 20 times LOR

Project: Sydney Metro - Waterloo Station
Duplicate Analysis RPDs
Project No. : 1791865
Batch/es: ES1832159 / 204227

Sample ID	SRT-BH418-1.0	SRT-QCA109	SRT-QCB109
Sample Type	Primary	Field Duplicate	Field Triplicate
Date Sampled	27/10/2018	27/10/2018	27/10/2018

Analyte	Units	LOR				RPDs	
						Primary vs Duplicate	Primary vs Triplicate
EIL Parameters							
Moisture	%	0.1	4.4	5.4	4.6	**20.41%**	**4.44%**
TRH - HSL							
TRH C6 - C10 Fraction F1	mg/kg	10	<10	<10	<25	ND	ND
TRH C6 - C10 Fraction Less BTEX F1	mg/kg	10	<10	<10	<25	ND	ND
TRH >C10 - C16 Fraction F2	mg/kg	50	<50	<50	<50	ND	ND
TRH >C10 - C16 Fraction Less Naphthalene (F2)	mg/kg	50	<50	<50	<50	ND	ND
TRH >C16 - C34 Fraction F3	mg/kg	100	<100	<100	<100	ND	ND
TRH >C34 - C40 Fraction F4	mg/kg	100	<100	<100	<100	ND	ND
TRH+C10 - C40 (Sum of total) (Lab Reported)	mg/kg	50	<50	<50	<50	ND	ND
TPH Group - Waste Classification							
TRH C6 - C9 Fraction	mg/kg	10	<10	<10	<25	ND	ND
TRH C10 - C14 Fraction	mg/kg	50	<50	<50	<50	ND	ND
TRH C15 - C28 Fraction	mg/kg	100	<100	<100	<100	ND	ND
TRH C29 - C36 Fraction	mg/kg	100	<100	<100	<100	ND	ND
TRH+C10 - C36 (Sum of total) (Lab Reported)	mg/kg	50	<50	<50	-	ND	-
BTEX							
Benzene	mg/kg	0.2	<0.2	<0.2	<0.2	ND	ND
Toluene	mg/kg	0.5	<0.5	<0.5	<0.5	ND	ND
Ethylbenzene	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Xylenes (m & p)	mg/kg	0.5	<0.5	<0.5	<2	ND	ND
Xylene (o)	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5	<0.5	<0.5	<1	ND	ND
Total BTEX	mg/kg	0.2	<0.2	<0.2	-	ND	-
Heavy Metals							
Arsenic	mg/kg	5	<5	<5	<4	ND	ND
Cadmium	mg/kg	1	<1	<1	<0.4	ND	ND
Chromium	mg/kg	2	<2	<2	<1	ND	ND
Copper	mg/kg	5	<5	11	1	**75.00%**	**133.33%**
Lead	mg/kg	5	<5	250	7	**192.16%**	**33.33%**
Mercury	mg/kg	0.1	<0.1	0.1	<0.1	**0.00%**	ND
Nickel	mg/kg	2	<2	<2	<1	ND	ND
Zinc	mg/kg	5	<5	85	8	**177.78%**	**46.15%**
PAH							
Acenaphthene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Acenaphthylene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Anthracene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Benz(a)anthracene	mg/kg	0.5	<0.5	<0.5	0.2	ND	**85.71%**
Benzo(a)pyrene	mg/kg	0.5	<0.5	<0.5	0.2	ND	**85.71%**
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5	<0.5	<0.5	<0.5	ND	ND
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5	0.6	0.6	<0.5	**0.00%**	**18.18%**
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5	1.2	1.2	<0.5	**0.00%**	**82.35%**
Benzo(b)&(j)fluoranthene	mg/kg	0.5	<0.5	<0.5	-	ND	-
Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	0.1	ND	**133.33%**
Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	-	ND	-
Chrysene	mg/kg	0.5	<0.5	<0.5	0.2	ND	**85.71%**
Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Fluoranthene	mg/kg	0.5	<0.5	0.9	0.3	**57.14%**	**50.00%**
Fluorene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.5	<0.5	0.1	ND	**133.33%**
Naphthalene	mg/kg	0.5	<0.5	<0.5	<0.1	ND	ND
Phenanthrene	mg/kg	0.5	<0.5	<0.5	0.2	ND	ND
Pyrene	mg/kg	0.5	<0.5	0.9	0.3	**57.14%**	**50.00%**
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5	<0.5	1.8	2.1	**113.04%**	**123.08%**

Legend
ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)
- = Not analysed/calculated
Indicates RPD result does not meet the acceptable criteria

Acceptable RPDs:
RPD <= 30%
RPD > 30%, Analysis result < 10 times LOR
RPD <= 50%, Analysis result > 10 times LOR and < 20 times LOR

Created By: BU 12/11/2018
Checked By: RB 13/11/2018

GOLDER

DATA VALIDATION SUMMARY SHEET

Project Name:	**Sydney Metro - Waterloo Station**	**Project Number:**	**1791865**
Primary Laboratory:	**ALS Sydney**	**Work order Number:**	**ES1832164**
Secondary Laboratory:	**Envirolab**	**Work order Number:**	**204219**
Date Sampled:	**28/10/2018**	**Sample Medium:**	**Groundwater**

Sample Information

Number of Primary Samples:	**4**	**Number of Triplicate Samples:**	**1**
Number of Duplicate Samples:	**1**	**Number of Other QAQC Samples:**	**2**

Documentation and Sample Handling Information

	Y/N	Comments
COC completed properly?	Yes	Signed by field staff and laboratory personnel (ALS & Envirolab)
All requested analysis completed?	Yes	All requested analyses on the COC performed by ALS & Envirolab.
Samples received intact and chilled?	No	ALS: 2.2'C, ice present. Security seal intact. Envirolab: 10.5 'C, ice. *Refer to overall comments.*
Samples analysed within appropriate holding times?	Yes	All samples were analysed within appropriate holding times (ALS & Envirolab).
Sample volumes sufficient for QC analysis?	Yes	Sufficient sample volume provided for all laboratory QC analyses (ALS & Envirolab).
Are there non-NATA accredited methods used?	No	ALS and Envirolab are NATA accredited for all methods used in this batch.
Chromatograms supplied as appropriate?	N/A	N/A.
Laboratory reports signed by authorised personnel?	Yes	All reports signed.

QAQC Sample Information (Method Blank - MB, Rinsate Blank - RB, Field Blank - FB, Trip Blank - TB)

Type	Sample ID	Comments
MB	Method Blank	All results were below the LOR (ALS & Envirolab).
TB	SRT-TB200	All results were below the LOR.

Trip Spike Information

Analyte	Control Spike Concentrations	Trip Spike Concentration	% Recovery	Comments
Sample ID: SRT-TS200				
Benzene	20	14	70%	Result is within data quality objectives (70%-130%).
Toluene	20	16	80%	Result is within data quality objectives (70%-130%).
Ethylbenzene	20	16	80%	Result is within data quality objectives (70%-130%).
m/p-xylene	20	16	80%	Result is within data quality objectives (70%-130%).
o-xylene	20	15	75%	Result is within data quality objectives (70%-130%).
Naphthalene	20	17	85%	Result is within data quality objectives (70%-130%).

Laboratory Control Spike (LCS) Analyses

Analyte Group	Comments
-	All laboratory control spike recoveries are within the laboratory based data quality objectives (ALS & Envirolab).

Matrix Spike (MS) Analyses

Analyte Group	Comments
Sulfate (Turbidimetric) as SO4 2- by DA	ALS: Matrix spike recovery for sulfate as SO4 turbidimetric for sample ES1832164--001 (SRT-BH419) was not determined. *Refer to overall comments.*
Nitrite plus Nitrate as N (NOx) by Discrete Analyser	ALS: Matrix spike recovery for nitrite + nitrate as N for sample ES1832164--001 (SRT-BH419) was not determined. *Refer to overall comments.*
-	All other matrix spike recoveries are within the laboratory based data quality objectives (ALS & Envirolab).

Laboratory Duplicates (LD) Analyses

Analyte Group	Sample ID	Comments
-	-	All laboratory duplicate RPDs are within the laboratory based data quality objectives (ALS & Envirolab).

Field Duplicates (FD) Analyses

Analyte Group	Primary ID	Duplicate ID	Comments
Cations, Anions & Nutrients	SRT-GMW2A	SRT-QCA200	Field duplicate RPD recovery for ionic balance (lab) (79%) is outside the acceptable data quality objectives. *Refer to overall comments.*
-	-	-	All other Field Duplicates PRDs are within acceptable data quality objectives.

Field Triplicate (FT) Analysis

Analyte Group	Primary ID	Triplicate ID	Comments
Cations, Anions & Nutrients	SRT-GMW2A	SRT-QCB200	Field triplicate RPD recovery for nitrogen (Total) (101.37%) is outside the acceptable data quality objectives. *Refer to overall comments .*
Perfluorinated Compounds	SRT-GMW2A	SRT-QCB200	Field triplicate RPD recoveries for Sum of PFHxS and PFOS (lab reported) (82.35%) and Sum of PFASs (n=28) (82.35%) are outside the acceptable data quality objectives. *Refer to overall comments.*
-	-	-	All other Field Triplicate RPDs are within acceptable data quality objectives.

Surrogate Compound Monitoring Analyses

Analyte Group	Analyte(s)	Comments
All	-	All surrogate recoveries are within acceptable data quality objectives (ALS & Envirolab).

Overall Comments

Envirolab: The sample receipt temperature reported by Envirolab was 10.5'C. The elevated temperature is not expected to significantly impact the overall quality of the data as samples were placed on ice immediately following collection and RPDs were generally within acceptable data quality objectives.

ALS: Matrix spike recovery for Sulfate as SO4 Turbidimetric for sample ES1832164--001 (SRT-BH419) was not determined. As stated by ALS "MS recovery not determined, background level greater than or equal to 4x spike level."

ALS: Matrix spike recovery for Nitrite + Nitrate as N for sample ES1832164--001 (SRT-BH419) was not determined. As stated by ALS "MS recovery not determined, background level greater than or equal to 4x spike level."

Field duplicate RPD recovery for ionic balance (lab) (79%) is outside the acceptable data quality objectives. Ionic balance is calculated by the laboratory using the major cations and anions. Given that the RPDs for the major cations and anions were within the acceptable DQOs, the exceedance for ionic balance (a calculated value) is not expected to impact the overall integrity of the results.

Field triplicate RPD recovery for nitrogen (Total) (101.37%), Sum of PFHxS and PFOS (lab reported) (82.35%) and Sum of PFASs (n=28) (82.35%) are outside the acceptable data quality objectives. For nitrogen this is likely the result of differences in inter-laboratory handling, extraction and/or analytical techniques. The RPD exceedance for PFAS are related to summations of individual compounds. It is noted that the RPDs for the individual PFAS compounds were within the acceptable DQOs. As a conservative measure, the highest concentration will be used for interpretive purposes.

This batch has been validated and is considered suitable for environmental interpretive use.

Note: Data validation assesses each analyte in terms of all the data validation variables and only the exceedances and outliers are reported in this form.

*When concentrations are less than the LOR for both primary and duplicate/triplicate results, no RPDs are calculated

Performed By:	**Bianca Underwood**	**Checked By:**	**Rita Bonetti**
Date:	**13/11/2018**	**Date:**	**14/11/2018**

Project: Sydney Metro - Waterloo Station
Duplicate Analysis RPDs
Project No. : 1791865
Batch/es: ES1832164 / 204219

			Sample ID	SRT-GMW2A	SRT-QCA200	SRT-QCB200		
			Sample Type	Primary	Field Duplicate	Field Triplicate		
			Date Sampled	28/10/2018	28/10/2018	28/10/2018		
							RPDs	
Analyte	**Units**	**LOR**					Primary vs Duplicate	Primary vs Triplicate
Cations, Anions & Nutrients								
Sodium (Filtered)	mg/L	1	29	30	32		**3.39%**	**9.84%**
Potassium (Filtered)	mg/L	1	6	6	6.4		**0.00%**	**6.45%**
Calcium (Filtered)	mg/L	1	37	38	36		**2.67%**	**2.74%**
Magnesium (Filtered)	mg/L	1	7	8	7.2		**13.33%**	**2.82%**
Chloride	mg/L	1	34	34	41		**0.00%**	**18.67%**
Sulphate (as SO4) (Filtered)	mg/L	1	50	46	49		**8.33%**	-
Bicarbonate Alkalinity (as CaCO3)	mg/L	1	48	45	-		**6.45%**	-
Carbonate Alkalinity (as CaCO3)	mg/L	1	<1	<1	-		ND	-
Hydroxide Alkalinity (as CaCO3)	mg/L	1	<1	<1	-		ND	-
Total Alkalinity (as CaCO3)	mg/L	1	48	45	-		**6.45%**	-
Nitrogen (Total Oxidised)	mg/L	0.01	13.6	13.7	-		**0.73%**	-
Ammonia (as N)	mg/L	0.01	0.03	0.02	<0.005		**40.00%**	**142.86%**
Total Kjeldahl Nitrogen (as N)	mg/L	0.1	0.8	0.9	-		**11.76%**	-
Nitrogen (Total)	mg/L	0.1	14.4	14.6	44		**1.38%**	**101.37%**
Fluoride	mg/L	0.1	0.5	0.5	-		**0.00%**	-
Reactive Phosphorus (as P)	mg/L	0.01	0.03	0.03	-		**0.00%**	-
Total Phosphorus (as P)	mg/L	0.01	0.03	0.03	0.06		**0.00%**	**66.67%**
Total Anions	meq/L	0.01	3.93	3.8	-		**3.36%**	-
Total Cations	meq/L	0.01	3.84	4.01	-		**4.33%**	-
Ionic Balance (Lab)	%	0.01	1.21	2.79	-		**79.00%**	-
Perfluorinated Compounds								
10:2 Fluorotelomer sulfonic acid	µg/L	0.05	<0.05	<0.05	<0.01		ND	ND
4:2 Fluorotelomer sulfonic acid	µg/L	0.05	<0.05	<0.05	<0.01		ND	ND
8:2 Fluorotelomer sulfonate	µg/L	0.05	<0.05	<0.05	<0.01		ND	ND
Perfluorobutanoic acid (PFBA)	µg/L	0.1	<0.1	<0.1	<0.02		ND	ND
Perfluoroheptane sulfonic acid	µg/L	0.02	<0.02	<0.02	<0.01		ND	ND
Perfluoro-n-pentanoic acid (PFPeA)	µg/L	0.02	<0.02	<0.02	<0.02		ND	ND
Perfluoropentane sulfonic acid	µg/L	0.02	<0.02	<0.02	<0.01		ND	ND
N-Et-FOSA	ug/L	0.05	<0.05	<0.05	<0.1		ND	ND
N-Et-FOSE	ug/L	0.05	<0.05	<0.05	<0.5		ND	ND
N-Me-FOSA	ug/L	0.05	<0.05	<0.05	<0.05		ND	ND
N-Me-FOSE	ug/L	0.05	<0.05	<0.05	<0.05		ND	ND
PFDcS	ug/L	0.02	<0.02	<0.02	<0.02		ND	ND
N-methyl-perfluorooctanesulfonamidoacetic acid	µg/L	0.02	<0.02	<0.02	<0.02		ND	ND
Sum of PFHxS and PFOS (lab reported)	µg/L	0.01	0.12	0.12	0.05		**0.00%**	**82.35%**
Sum of WA DER PFAS (n=10)	µg/L	0.01	0.12	0.12	-		**0.00%**	-
Sum of PFASs (n=28)	µg/L	0.01	0.12	0.12	0.05		**0.00%**	**82.35%**
Perfluorobutanesulfonic acid (PFBS)	µg/L	0.02	<0.02	<0.02	<0.01		ND	ND
Perfluorodecanoic acid (PFDA)	µg/L	0.02	<0.02	<0.02	<0.02		ND	ND
Perfluorododecanoic acid (PFDoA)	µg/L	0.02	<0.02	<0.02	<0.05		ND	ND
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02	<0.02	<0.02	<0.01		ND	ND
Perfluorooctanesulfonic acid (PFOS)3	µg/L	0.01	0.09	0.09	0.04		**0.00%**	**76.92%**
Perfluorooctanoate (PFOA)	µg/L	0.01	<0.01	<0.01	<0.01		ND	ND
Perfluorohexanesulfonic acid (PFHxS)	µg/L	0.02	0.03	0.03	0.01		**0.00%**	**100.00%**
Perfluorononanoic acid (PFNA)	µg/L	0.02	<0.02	<0.02	<0.01		ND	ND
Perfluorohexanoic acid (PFHxA)	µg/L	0.02	<0.02	<0.02	<0.01		ND	ND
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.05	<0.05	<0.05	<0.01		ND	ND
N-ethyl-perfluorooctanesulfonamidoacetic acid	µg/L	0.02	<0.02	<0.02	<0.02		ND	ND
Perfluorooctanesulfonamide (PFOSA)	µg/L	0.02	<0.02	<0.02	<0.1		ND	ND
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.05	<0.05	<0.05	<0.5		ND	ND
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.02	<0.02	<0.02	<0.1		ND	ND
Perfluoroundecanoic acid (PFUnA)	µg/L	0.02	<0.02	<0.02	<0.02		ND	ND
TRH - HSL								
TRH C6 - C10 Fraction F1	mg/L	0.02	<0.02	<0.02	0.017		ND	**16.22%**
TRH C6 - C10 Fraction Less BTEX F1	mg/L	0.02	<0.02	<0.02	0.017		ND	**16.22%**
TRH >C10 - C16 Fraction F2	mg/L	0.1	<0.1	<0.1	<0.05		ND	ND
TRH >C10 - C16 Fraction Less Naphthalene (F2)	mg/L	0.1	<0.1	<0.1	<0.05		ND	ND
TRH >C16 - C34 Fraction F3	mg/L	0.1	<0.1	<0.1	<0.1		ND	ND
TRH >C34 - C40 Fraction F4	mg/L	0.1	<0.1	<0.1	<0.1		ND	ND
TRH+C10 - C40 (Sum of total) (Lab Reported)	mg/L	0.1	<0.1	<0.1	-		ND	-
TPH Group - Waste Classification								
TRH C6 - C9 Fraction	mg/L	0.02	<0.02	<0.02	0.016		ND	**22.22%**
TRH C10 - C14 Fraction	mg/L	0.05	<0.05	<0.05	<0.05		ND	ND
TRH C15 - C28 Fraction	mg/L	0.1	<0.1	<0.1	<0.1		ND	ND
TRH C29 - C36 Fraction	mg/L	0.05	<0.05	<0.05	<0.1		ND	ND
TRH+C10 - C36 (Sum of total) (Lab Reported)	mg/L	0.05	<0.05	<0.05	-		ND	-
BTEX								
Benzene	µg/L	1	<1	<1	<1		ND	ND
Toluene	µg/L	2	<2	<2	<1		ND	ND
Ethylbenzene	µg/L	2	<2	<2	<1		ND	ND
Xylenes (m & p)	µg/L	2	<2	<2	<2		ND	ND
Xylene (o)	µg/L	2	<2	<2	<1		ND	ND
Xylenes (Sum of total) (Lab Reported)	µg/L	2	<2	<2	-		ND	-
Total BTEX	µg/L	1	<1	<1	-		ND	-
Heavy Metals								
Arsenic (Filtered)	µg/L	1	<1	<1	<1		ND	ND
Cadmium (Filtered)	µg/L	0.1	<0.1	<0.1	0.1		ND	**0.00%**
Chromium (Filtered)	µg/L	1	<1	<1	<1		ND	ND
Copper (Filtered)	µg/L	1	1	1	1		**0.00%**	**0.00%**
Lead (Filtered)	µg/L	1	<1	<1	<1		ND	ND
Mercury (Filtered)	µg/L	0.1	<0.1	<0.1	<0.05		ND	ND
Nickel (Filtered)	µg/L	1	<1	<1	<1		ND	ND
Zinc (Filtered)	µg/L	5	**58**	**58**	**60**		**0.00%**	**3.39%**
Organochlorine Pesticides								
a-BHC	µg/L	0.5	<0.5	<0.5	<0.2		ND	ND
Aldrin	µg/L	0.5	<0.5	<0.5	<0.2		ND	ND
Dieldrin	µg/L	0.5	<0.5	<0.5	<0.2		ND	ND
Aldrin & Dieldrin (Sum of total) (Lab Reported)	µg/L	0.5	<0.5	<0.5	-		ND	-
b-BHC	µg/L	0.5	<0.5	<0.5	<0.2		ND	ND
cis-Chlordane	µg/L	0.5	<0.5	<0.5	<0.2		ND	ND
trans-Chlordane	µg/L	0.5	<0.5	<0.5	<0.2		ND	ND
Chlordane (Sum of total)	µg/L	0.5	<0.5	<0.5	-		ND	-
d-BHC	µg/L	0.5	<0.5	<0.5	<0.2		ND	ND

DDD	µg/L	0.5	<0.5	<0.5	<0.2	ND	ND
DDE	µg/L	0.5	<0.5	<0.5	<0.2	ND	ND
DDT	µg/L	2	<2	<2	<0.2	ND	ND
DDT+DDE+DDD (Sum of total) (Lab Reported)	µg/L	0.5	<0.5	<0.5	-	ND	-
Endosulfan I	µg/L	0.5	<0.5	<0.5	<0.2	ND	ND
Endosulfan II	µg/L	0.5	<0.5	<0.5	<0.2	ND	ND
Endosulfan sulphate	µg/L	0.5	<0.5	<0.5	<0.2	ND	ND
Endrin	µg/L	0.5	<0.5	<0.5	<0.2	ND	ND
Endrin aldehyde	µg/L	0.5	<0.5	<0.5	<0.2	ND	ND
Endrin ketone	µg/L	0.5	<0.5	<0.5	-	ND	-
g-BHC	µg/L	0.5	<0.5	<0.5	<0.2	ND	ND
Heptachlor	µg/L	0.5	<0.5	<0.5	<0.2	ND	ND
Heptachlor epoxide	µg/L	0.5	<0.5	<0.5	<0.2	ND	ND
Hexachlorobenzene	µg/L	0.5	<0.5	<0.5	<0.2	ND	ND
Methoxychlor	µg/L	2	<2	<2	<0.2	ND	ND
Organophosphorous Pesticides							
Azinphos-methyl	µg/L	0.5	<0.5	<0.5	<0.2	ND	ND
Bromophos-ethyl	µg/L	0.5	<0.5	<0.5	<0.2	ND	ND
Carbophenothion	µg/L	0.5	<0.5	<0.5	-	ND	-
Chlorfenvinphos	µg/L	0.5	<0.5	<0.5	-	ND	-
Chlorpyriphos	µg/L	0.5	<0.5	<0.5	<0.2	ND	ND
Chlorpyriphos-methyl	µg/L	0.5	<0.5	<0.5	<0.2	ND	ND
Demeton-s-methyl	µg/L	0.5	<0.5	<0.5	-	ND	-
Diazinon	µg/L	0.5	<0.5	<0.5	<0.2	ND	ND
Dichlorvos	µg/L	0.5	<0.5	<0.5	<0.2	ND	ND
Dimethoate	µg/L	0.5	<0.5	<0.5	<0.2	ND	ND
Ethion	µg/L	0.5	<0.5	<0.5	<0.2	ND	ND
Fenamiphos	µg/L	0.5	<0.5	<0.5	-	ND	-
Fenthion	µg/L	0.5	<0.5	<0.5	-	ND	-
Malathion	µg/L	0.5	<0.5	<0.5	<0.2	ND	ND
Parathion-methyl	µg/L	2	<2	<2	-	ND	-
Monocrotophos	µg/L	2	<2	<2	-	ND	-
Parathion	µg/L	2	<2	<2	<0.2	ND	ND
Pirimphos-ethyl	µg/L	0.5	<0.5	<0.5	-	ND	-
Prothiofos	µg/L	0.5	<0.5	<0.5	-	ND	-
PAH							
Acenaphthene	µg/L	1	<1	<1	<1	ND	ND
Acenaphthylene	µg/L	1	<1	<1	<1	ND	ND
Anthracene	µg/L	1	<1	<1	<1	ND	ND
Benz(a)anthracene	µg/L	1	<1	<1	<1	ND	ND
Benzo(a)pyrene	µg/L	0.5	<0.5	<0.5	<1	ND	ND
Benzo(a)pyrene TEQ (lower bound)*	µg/L	0.5	<0.5	<0.5	<5	ND	ND
Benzo(b)&(j)fluoranthene	µg/L	1	<1	<1	<2	ND	ND
Benzo(g,h,i)perylene	µg/L	1	<1	<1	<1	ND	ND
Benzo(k)fluoranthene	µg/L	1	<1	<1	-	ND	-
Chrysene	µg/L	1	<1	<1	<1	ND	ND
Dibenz(a,h)anthracene	µg/L	1	<1	<1	<1	ND	ND
Fluoranthene	µg/L	1	<1	<1	<1	ND	ND
Fluorene	µg/L	1	<1	<1	<1	ND	ND
Indeno(1,2,3-c,d)pyrene	µg/L	1	<1	<1	<1	ND	ND
Naphthalene	µg/L	1	<1	<1	<1	ND	ND
Phenanthrene	µg/L	1	<1	<1	<1	ND	ND
Pyrene	µg/L	1	<1	<1	<1	ND	ND
PAH (Sum of Common 16 PAHs - Lab Reported)	µg/L	0.5	<0.5	<0.5	-	ND	-
Phenols							
Phenolics (Sum of total)	µg/L	50	<50	<50	<50	ND	ND
Polychlorinated Biphenyls							
PCB (Sum of Total-Lab Reported)	µg/L	1	<1	<1	-	ND	-
Volatile Organic Compounds							
1,4-Dichlorobenzene	µg/L	5	<5	<5	<1	ND	ND
4-Chlorotoluene	µg/L	5	<5	<5	<1	ND	ND
1,2,3-Trichlorobenzene	µg/L	5	<5	<5	<1	ND	ND
1,2,4-Trichlorobenzene	µg/L	5	<5	<5	<1	ND	ND
1,2-Dichlorobenzene	µg/L	5	<5	<5	<1	ND	ND
1,3-Dichlorobenzene	µg/L	5	<5	<5	<1	ND	ND
2-Chlorotoluene	µg/L	5	<5	<5	<1	ND	ND
Bromobenzene	µg/L	5	<5	<5	<1	ND	ND
Chlorobenzene	µg/L	5	<5	<5	<1	ND	ND
1,2,4-trimethylbenzene	µg/L	5	<5	<5	<1	ND	ND
1,3,5-Trimethylbenzene	µg/L	5	<5	<5	<1	ND	ND
Isopropylbenzene	µg/L	5	<5	<5	<1	ND	ND
n-Butylbenzene	µg/L	5	<5	<5	<1	ND	ND
n-Propylbenzene	µg/L	5	<5	<5	<1	ND	ND
p-Isopropyltoluene	µg/L	5	<5	<5	<1	ND	ND
sec-Butylbenzene	µg/L	5	<5	<5	<1	ND	ND
Styrene	µg/L	5	<5	<5	<1	ND	ND
tert-Butylbenzene	µg/L	5	<5	<5	<1	ND	ND
Methyl Ethyl Ketone	µg/L	50	<50	<50	-	ND	-
2-Hexanone	µg/L	50	<50	<50	-	ND	-
Methyl iso-butyl ketone	µg/L	50	<50	<50	-	ND	-
Vinyl acetate	µg/L	50	<50	<50	-	ND	-
1,1,1,2-Tetrachloroethane	µg/L	5	<5	<5	<1	ND	ND
1,1,2,2-Tetrachloroethane	µg/L	5	<5	<5	<1	ND	ND
1,1,1-Trichloroethane	µg/L	5	<5	<5	<1	ND	ND
1,1,2-Trichloroethane	µg/L	5	<5	<5	<1	ND	ND
1,2,3-Trichloropropane	µg/L	5	<5	<5	<1	ND	ND
1,2-Dibromo-3-chloropropane	µg/L	5	<5	<5	<1	ND	ND
1,2-Dibromoethane	µg/L	5	<5	<5	<1	ND	ND
1,1-Dichloroethane	µg/L	5	<5	<5	<1	ND	ND
1,2-Dichloroethane	µg/L	5	<5	<5	<1	ND	ND
1,1-Dichloroethene	µg/L	5	<5	<5	<1	ND	ND
cis-1,2-Dichloroethene	µg/L	5	<5	<5	<1	ND	ND
trans-1,2-dichloroethene	µg/L	5	<5	<5	<1	ND	ND
1,2-Dichloropropane	µg/L	5	<5	<5	<1	ND	ND
1,3-Dichloropropane	µg/L	5	<5	<5	<1	ND	ND
2,2-Dichloropropane	µg/L	5	<5	<5	<1	ND	ND
1,1-Dichloropropene	µg/L	5	<5	<5	<1	ND	ND
cis-1,3-Dichloropropene	µg/L	5	<5	<5	<1	ND	ND
trans-1,3-dichloropropene	µg/L	5	<5	<5	<1	ND	ND
cis-1,4-Dichloro-2-butene	µg/L	5	<5	<5	-	ND	-
trans-1,4-Dichloro-2-butene	µg/L	5	<5	<5	-	ND	-

Bromodichloromethane	µg/L	5	<5	<5	<1	ND	ND
Bromoform	µg/L	5	<5	<5	<1	ND	ND
Bromomethane	µg/L	50	<50	<50	<10	ND	ND
Carbon disulfide	µg/L	5	<5	<5	-	ND	-
Carbon tetrachloride	µg/L	5	<5	<5	<1	ND	ND
Chlorodibromomethane	µg/L	5	<5	<5	<1	ND	ND
Chloroethane	µg/L	50	<50	<50	<10	ND	ND
Chloroform	µg/L	5	14	14	16	**0.00%**	**13.33%**
Chloromethane	µg/L	50	<50	<50	<10	ND	ND
Dibromomethane	µg/L	5	<5	<5	<1	ND	ND
Dichlorodifluoromethane	µg/L	50	<50	<50	<10	ND	ND
Hexachlorobutadiene	µg/L	5	<5	<5	<1	ND	ND
Iodomethane	µg/L	5	<5	<5	-	ND	-
Pentachloroethane	µg/L	5	<5	<5	-	ND	-
Trichloroethene	µg/L	5	<5	<5	<1	ND	ND
Tetrachloroethene	µg/L	5	<5	<5	1	ND	**133.33%**
Trichlorofluoromethane	µg/L	50	<50	<50	<10	ND	ND
Vinyl chloride	µg/L	50	<50	<50	<10	ND	ND

Legend

ND = Not Detected (RPDs not calculated if both primary and duplicate results are below LOR)

- = Not analysed/calculated

Indicates RPD result does not meet the acceptable criteria

Acceptable RPDs: RPD <= 30%

RPD > 30%, Analysis result < 10 times LOR

RPD <= 50%, Analysis result > 10 times LOR and < 20 times LOR

GOLDER

DATA VALIDATION SUMMARY SHEET

Project Name:	**Sydney Metro - Waterloo Station**	**Project Number:**	**1791865**
Primary Laboratory:	**ALS Sydney**	**Work order Number:**	**ES1832698**
Secondary Laboratory:	**-**	**Work order Number:**	**-**
Date Sampled:	**1-2/11/2018**	**Sample Medium:**	**Groundwater**

Sample Information

Number of Primary Samples:	**2**	**Number of Triplicate Samples:**	**0**
Number of Duplicate Samples:	**0**	**Number of Other QAQC Samples:**	**2**

Documentation and Sample Handling Information

	Y/N	Comments
COC completed properly?	Yes	Signed by field staff and laboratory personnel.
All requested analysis completed?	Yes	All requested analyses on the COC performed by ALS
Samples received intact and chilled?	Yes	ALS: 5.6'C, ice present.
Samples analysed within appropriate holding times?	Yes	All samples were analysed within appropriate holding times.
Sample volumes sufficient for QC analysis?	No	Insufficient sample volume for laboratory duplicates and matrix spikes for PAH/Phenols, Pesticides by GCMS, Polychlorinated Biphenyls and TRH - semi volatile fraction in water. *Refer to overall comments.*
Are there non-NATA accredited methods used?	No	ALS are NATA accredited for all methods used in this batch.
Chromatograms supplied as appropriate?	N/A	N/A.
Laboratory reports signed by authorised personnel?	Yes	All reports signed.

QAQC Sample Information (Method Blank - MB, Rinsate Blank - RB, Field Blank - FB, Trip Blank - TB)

Type	Sample ID	Comments
MB	Method Blank	All results were below the LOR.
TB	SRT-TB200	All results were below the LOR.

Trip Spike Information

Analyte	Control Spike Concentrations	Trip Spike Concentration	% Recovery	Comments
Sample ID: SRT-TS200				
Benzene	20	15	75%	Result is within data quality objectives (70%-130%).
Toluene	20	14	70%	Result is within data quality objectives (70%-130%).
Ethylbenzene	20	14	70%	Result is within data quality objectives (70%-130%).
m/p-xylene	20	14	70%	Result is within data quality objectives (70%-130%).
o-xylene	20	16	80%	Result is within data quality objectives (70%-130%).
Naphthalene	20	18	90%	Result is within data quality objectives (70%-130%).

Laboratory Control Spike (LCS) Analyses

Analyte Group	Comments
-	All laboratory control spike recoveries are within the laboratory based data quality objectives.

Matrix Spike (MS) Analyses

Analyte Group	Comments
-	All matrix spike recoveries are within the laboratory based data quality objectives.

Laboratory Duplicates (LD) Analyses

Analyte Group	Sample ID	Comments
-	-	All laboratory duplicate RPDs are within the laboratory based data quality objectives.

Field Duplicates (FD) Analyses

Analyte Group	Primary ID	Duplicate ID	Comments
-	-	-	No FD analysis was undertaken.

Field Triplicate (FT) Analysis

Analyte Group	Primary ID	Triplicate ID	Comments
-	-	-	No FT analysis was undertaken.

Surrogate Compound Monitoring Analyses

Analyte Group	Analyte(s)	Comments
-	-	All surrogate recoveries are within acceptable data quality objectives.

Overall Comments

The quality control frequency for laboratory duplicates and matrix spikes for PAH/Phenols, Pesticides by GCMS, Polychlorinated Biphenyls and TRH - semi volatile fraction in water were not within specification for laboratory duplicates. It is noted that laboratory control spike recoveries, surrogate recoveries and method blank analyses of these compounds were within the laboratory based data quality objectives. The quality control frequencies were likely not met for this batch due to insufficient sample volume or due to the small size of the batch (2 primary samples).

This batch has been validated and is considered suitable for environmental interpretive use.

Note: Data validation assesses each analyte in terms of all the data validation variables and only the exceedances and outliers are reported in this form.

*When concentrations are less than the LOR for both primary and duplicate/triplicate results, no RPDs are calculated

Performed By:	**Bianca Underwood**	**Checked By:**	**Rita Bonetti**
Date:	**13/11/2018**	**Date:**	**14/11/2018**

GOLDER

DATA VALIDATION SUMMARY SHEET (Sydney)

Project Name:	**Sydney Metro - Waterloo Station**	**Project Number:**	**1791865**
Primary Laboratory:	**ALS Sydney**	**Work order Number:**	**ES1833432 (Rebatch of ES1829955)**
Secondary Laboratory:	**-**	**Work order Number:**	**-**
Date Sampled:	**6/10/2018**	**Sample Medium:**	**Soil**

Sample Information

Number of Primary Samples:	**1**	**Number of Triplicate Samples:**	**0**
Number of Duplicate Samples:	**0**	**Number of Other QAQC Samples:**	**0**

Documentation and Sample Handling Information

	Y/N	Comments
COC completed properly?	Yes	Additional analysis requested electronically.
All requested analysis completed?	Yes	All requested analyses on the COC performed by ALS.
Samples received intact and chilled?	Yes	ALS: 4.1'C
Samples analysed within appropriate holding times?	No	ALS: Sample SRT_BH410_1.5 was extracted 1 day overdue for pH 1:5 (Soils). *Refer to overall comments.* All other samples were analysed within appropriate holding times.
Sample volumes sufficient for QC analysis?	Yes	Sufficient sample volume provided for all laboratory QC analyses.
Are there non-NATA accredited methods used?	Yes	ALS are not NATA accredited for Soil Particle Density (Clay/Silt/Sand). ALS is NATA accredited for all other methods used in this batch.
Chromatograms supplied as appropriate?	N/A	N/A.
Laboratory reports signed by authorised personnel?	Yes	All reports signed.

QAQC Sample Information (Method Blank - MB, Rinsate Blank - RB, Field Blank - FB, Trip Blank - TB)

Type	Sample ID	Comments
MB	Method Blank	All results were below the LOR.

Trip Spike Information

Analyte	Control Spike Concentrations	Trip Spike Concentration	% Recovery	Comments
Sample ID: No Trip Spike analysis was required for this batch.				

Laboratory Control Spike (LCS) Analyses

Analyte Group	Comments
-	All laboratory control spike recoveries are within the laboratory based data quality objectives.

Matrix Spike (MS) Analyses

Analyte Group	Comments
	All matrix spike recoveries are within the laboratory based data quality objectives.

Laboratory Duplicates (LD) Analyses

Analyte Group	Sample ID	Comments
-	-	All laboratory duplicate RPDs are within the laboratory based data quality objectives.

Field Duplicates (FD) Analyses

Analyte Group	Primary ID	Duplicate ID	Comments
			No FD analysis was undertaken.

Field Triplicate (FT) Analysis

Analyte Group	Primary ID	Triplicate ID	Comments
			No FT analysis was undertaken.

Surrogate Compound Monitoring Analyses

Analyte Group	Analyte(s)	Comments
All	-	All surrogate recoveries are within acceptable data quality objectives.

Overall Comments

ALS reported a holding breach for the extraction of pH 1:5 (soils) by 1 day. This is not expected to affect the validity of this batch as breach from acceptable criteria (1 day) was marginal.

This batch has been validated and is considered suitable for environmental interpretive use.

Note: Data validation assesses each analyte in terms of all the data validation variables and only the exceedances and outliers are reported in this form.
*When concentrations are less than the LOR for both primary and duplicate/triplicate results, no RPDs are calculated

Performed By:	**Bianca Underwood**	**Checked By:**	**Tegen Anning**
Date:	**13/11/2018**	**Date:**	**22/11/2018**

GOLDER

DATA VALIDATION SUMMARY SHEET (Sydney)

Project Name:	**Sydney Metro - Waterloo Station**	**Project Number:**	**1791865**
Primary Laboratory:	**ALS Sydney**	**Work order Number:**	**ES1833627 (Re-batch of ES1832159)**
Secondary Laboratory:	**-**	**Work order Number:**	**-**
Date Sampled:	**27-10-2018 / 28-10-2018**	**Sample Medium:**	**Soil (TCLP)**

Sample Information

Number of Primary Samples:	**6**	**Number of Triplicate Samples:**	**0**
Number of Duplicate Samples:	**0**	**Number of Other QAQC Samples:**	**0**

Documentation and Sample Handling Information

	Y/N	Comments
COC completed properly?	Y	Additional analysis requested electronically.
All requested analysis completed?	Y	All requested analysis completed.
Samples received intact and chilled?	Y	ALS: 2.2'C.
Samples analysed within appropriate holding times?	N	ALS: Sample SRT-BH425-0.4 and SRT-BH425-1.0 were 3 days overdue for extraction of Non-Volatile Leach. *Refer to overall comments.* *All other samples were analysed within appropriate holding times.*
Sample volumes sufficient for QC analysis?	N	ALS: Insufficient sample volume for laboratory duplicate and matrix spikes for PAH/Phenols. *Refer to overall comments.* Sufficient sample volume provided for all other laboratory QC analyses.
Are there non-NATA accredited methods used?	N	ALS are accredited for all methods used in this batch.
Chromatograms supplied as appropriate?	N/A	N/A
Laboratory reports signed by authorised personnel?	Y	All laboratory reports signed by authorised personnel

QAQC Sample Information (Method Blank - MB, Rinsate Blank - RB, Field Blank - FB, Trip Blank - TB)

Type	Sample ID	Comments
Method Blank	MB	All results were below the LOR.

Trip Spike Information

Analyte	Control Spike Concentrations	Trip Spike Concentration	% Recovery	Comments
Sample ID: No Trip Spike analysis was required for this batch.				

Laboratory Control Spike (LCS) Analyses

Analyte Group	Comments
All	All laboratory control spikes are within laboratory based DQOs.

Matrix Spike (MS) Analyses

Analyte Group	Comments
All	All matrix spikes are within laboratory based DQOs.

Laboratory Duplicates (LD) Analyses

Analyte Group	Sample ID	Comments
All	-	All laboratory duplicate are within laboratory based DQOs.

Field Duplicates (FD) Analyses

Analyte Group	Primary ID	Duplicate ID	Comments
-	-	-	No Field duplicate analysis was undertaken.

Field Triplicates (FT) Analyses

Analyte Group	Primary ID	Triplicate ID	Comments
-	-	-	No Field triplicate analysis was undertaken.

Surrogate Compound Monitoring Analyses

Analyte Group	Analyte(s)	Comments
-	-	No surrogates analysis was undertaken.

Overall Comments

ALS reported a holding time breach of 3 days for the extraction of Non-Volatile Leach in samples SRT-BH425-0.4 and SRT-BH425-1.0. It is noted that samples were stored appropriately by ALS and that TCLP data will be used to provide an indication of preliminary waste classification only, and will not be used for the assessment of the site suitability.

ALS: The quality control frequency for PAH/Phenols are less than the specification for laboratory duplicates and matrix spikes. It is noted that laboratory control spike recoveries, surrogate recovers and method blank analyses were within the laboratory based data quality objectives.

This batch has been validated and is considered suitable for environmental interpretive use.

Note: Data validation assesses each analyte in terms of all the data validation variables and only the exceedances and outliers are reported in this form.

*When concentrations are less than the LOR for both primary and duplicate/triplicate results, no RPDs are calculated

Performed By:	**Bianca Underwood**	**Checked By:**	**BH**
Date:	**21/11/2018**	**Date:**	**2/12/2018**

APPENDIX J2

QA/QC Review

1.0 QA/QC EVALUATION

Golder-Douglas has undertaken a review of the data quality for the site investigation works as part of the ESA at the proposed Waterloo Integrated Station Development site located at Botany Road, Waterloo, NSW. The review includes an assessment of the soil, soil vapour and groundwater sampling procedures and the laboratory analysis results provided by Australian Laboratory Services (ALS) and Envirolab Services (ELS), and subcontracted laboratories.

2.0 QUALITY CONTROL

2.1 Field QA/QC Program

Field QA/QC for this project consisted of the collection of blind replicate, split replicate, rinsate (where applicable), trip blank and trip spike samples.

2.1.1 Blind Replicate Samples (Field Duplicate Samples)

Blind replicate samples were provided by the collection of two environmental samples from the same location. These samples were preserved, stored, transported, prepared and analysed in an identical manner. As a minimum, the results of analyses on the blind replicate sample pair were assessed by calculating the Relative Percentage Differences (RPDs) between the results. The RPD was calculated as the difference between the results divided by their mean value and expressed as a percentage. If the RPD exceeded the value adopted for any analytes, additional investigation would be required, or justification provided for not conducting additional investigation. The following blind replicate samples were collected and analysed:

- Soil:
  - SRT_BH409_0.5 / QCA101
  - SRT_BH421_0.5 / QCA102
  - SRT_BH422_1.0 / QCA103
  - SRT_BH419_1.0 / QCA104
  - SRT_BH415_0.5 / QCA106
  - SRT_BH424_0.5 / QCA108
  - SRT_BH418_1.0 / QCA109
- Groundwater:
  - SRT-GMW2A / SRT-QCA200
- Soil Vapour:
  - SRT-BH415 / QC100

Blind replicate samples were generally analysed at a rate higher than one duplicate for every 20 environmental samples in accordance with AS 4482.1-2005.

2.1.2 Split Samples (Field Triplicate Samples)

Split samples provided a check on the analytical proficiency of the laboratories. Split samples were provided by the collection of two environmental samples from the same location. These samples were preserved, stored, transported and prepared in an identical manner. The spilt samples were analysed by the secondary laboratory. As a minimum, the results of analyses on the split replicate sample pair were assessed by calculating the RPDs between the results. The RPD was calculated as the difference between the results divided by their mean value and expressed as a percentage. If the RPD exceeded the value adopted for any analytes, additional investigation would be required, or justification provided for not conducting additional investigation. The following spilt samples were collected and analysed:

- Soil:

- SRT_BH409_0.5 / QCB101
- SRT_BH421_0.5 / QCB102
- SRT_BH422_1.0 / QCB103
- SRT_BH419_1.0 / QCB104
- SRT_BH415_0.5 / QCB106
- SRT_BH424_0.5 / QCB108
- SRT_BH418_1.0 / QCB109

- Groundwater:
  - SRT-GMW2A / SRT-QCB200
- Soil Vapour:
  - SRT-BH415 / QC200

Split replicate samples were generally analysed at a rate higher than one replicate for every 20 environmental samples in accordance with AS 4482.1-2005.

2.1.3 Rinsate (Equipment) Samples

The rinsate (equipment) blanks consisted of pre-preserved bottles filled with laboratory-prepared water that had been passed over decontaminated field equipment. The rinsate blank was prepared on site, labelled with a unique sample identification number and transported to the primary laboratory for analysis as regular environmental samples. The purpose of rinsate blank was to assess the efficiency of decontamination procedures.

For inorganic compounds and semi-volatile organic compounds (SVOCs), the rinsate water consisted of milli-Q water (distilled tap water passed through a resin de-ioniser). For volatiles (VOC) the rinsate water consisted of purge water (purged spring water that has not been potentially adulterated by VOCs as with tap water).

Rinsate blanks were collected from non-disposable sampling equipment (i.e. hand auger, SPT split) used during soil sampling. A rinsate blank was collected at a rate of one rinsate blank per day, per matrix per piece of equipment as detailed in AS 4482.1-2005 (where applicable).

Seven rinsate blanks were collected on analysed during the soil sampling program when a hand auger or SPT split was used between sampling locations and sampling depths. No rinsate blanks were collected during the soil vapour or groundwater sampling events.

2.1.4 Trip Blanks

The trip blanks consisted of laboratory-supplied purge water. The purpose of trip blanks was to detect potential contamination during sample transport. These samples were kept within eskies during sampling activities and were not opened in the field. Trip blanks were analysed at the laboratory as regular samples for BTEXN and TRH C_6-C_{10} compounds only.

A total of five trip blanks were submitted with the soil samples and two with the groundwater samples to the primary laboratory. A trip blank was not required to be summitted with the soil vapour samples (or with re-batches for toxicity characteristic leaching procedure (TCLP).

2.1.5 Laboratory-Prepared Trip Spike

Laboratory-prepared trip spikes consisted of purge water spiked with known concentrations of BTEX and TRH C_6-C_{10} compounds. These samples were submitted for BTEX and TRH C_6-C_{10} compounds analysis with the results compared with the known additions. Generally, samples were spiked with known concentrations of benzene, toluene, ethylbenzene and total xylenes respectively. The purpose of these samples was to monitor potential VOC losses during transit.

A total of five trip spikes were submitted with the soil samples and two with the groundwater samples to the primary laboratory. A trip spike was not required to be summitted with the soil vapour samples (or with re-batches for TCLP.

2.2 Laboratory QA/QC Program

The reliability of test results from the analytical laboratories was monitored according to the QA/QC procedures used by the NATA accredited laboratory. The QA/QC programme employed by ALS (the primary laboratory) and ELS (secondary laboratory) specified holding times, extraction dates, method descriptions, Chain of Custody requirements, analysis, LORs and acceptance criteria for the results. Laboratory QA/QC requirements undertaken by ALS and ELS are based on NEPM requirements and are outlined below (NEPC 2013).

2.2.1 Laboratory Duplicate Samples

Laboratory duplicates provide data on analytical precision for each batch of samples.

Laboratory duplicates were generally performed at a rate of one duplicate for batches of 20 samples with an additional duplicate for each subsequent ten samples.

2.2.2 Laboratory Control Samples

Laboratory control samples consisted of a clean matrix (de-ionised water or clean sand) spiked with a known concentration of the analyte being measured. These samples monitored method recovery in clean samples and were used (where required) to evaluate matrix interference by comparison with matrix spikes.

2.2.3 Surrogates

For organic analyses, a surrogate was added at the extraction stage in order to verify method effectiveness. The surrogate was then analysed with the batch of samples and percentage recovery calculated.

2.2.4 Matrix Spike

Matrix spikes consisted of samples spiked with a known concentration of the analyte being measured, in order to identify properties of the matrix that may hinder method effectiveness. Samples were spiked with concentrations equivalent to 5 to 10 times the Limit of Reporting (LOR) and percentage recovery calculated.

2.2.5 Method Blanks

Method blanks (de-ionised water or clear sand) were carried through all stages of sample preparation and analysis at a rate of approximately 10 %. Analyte concentrations in blanks should be less than the stated LOR. Reagent blanks were run if the method blank exceeded the LOR. The purpose of method blanks was to detect laboratory contamination.

2.3 Data Acceptance Criteria

The QA/QC compliance of the sampling and analysis is implemented through the comparison against the data acceptance criteria (DAC) contained within Table 1.

Table 1: QA/QC Compliance Assessment

QA/QC Sample Type	Method of Assessment	Acceptable Range
Field QA/QC		
Blind Replicates and Split Samples	The assessment of replicate samples is undertaken by calculating the Relative Percentage Difference (RPD) of the replicate concentration compared with the original sample concentration. The RPD is defined as: $RPD = 100 \times \frac{\lvert X1 - X2 \rvert}{Average}$	The acceptable range depends upon the levels detected: ▪ 0 – 30% RPD ▪ >30% RPD (when the analysis result is <10 times the LOR) ▪ <= 50% RPD (when the analysis results is >10 times and <20 times the LOR)

QA/QC Sample Type	Method of Assessment	Acceptable Range
	Where: X1 and X2 are the concentration of the original and replicate samples.	
Blanks (Rinsate and Trip Blanks)	Each blank is analysed as per the original samples.	Analytical Result < LOR
Laboratory-prepared Trip Spike	The trip spike is analysed after returning from the field and the % recovery of the known spike is calculated.	70% - 130%
Laboratory QA/QC		
Laboratory Duplicates	Assessment as per Blind Replicates and Split Samples.	The acceptable range depends upon the levels detected: ▪ 0 – 100% RPD (When the average concentration is < 5 times the LOR) ▪ 0 – 50% RPD (When the average concentration is 5 to 10 times the LOR) ▪ 0 – 30% RPD (When the average concentration is > 10 times the LOR)
Surrogates Matrix Spikes Laboratory Control Samples	Assessment is undertaken by determining the percent recovery of the known spike or addition to the sample. $\%\ Recovery = 100 \times \frac{C - A}{B}$ Where: A = Concentration of analyte determined in the original sample; B = Added Concentration; C = Calculated Concentration.	The acceptable range is generally as follows, however, this may vary between laboratories: ▪ 70% - 130% (inorganics / metals) ▪ 60% - 140% (organics) ▪ 50% - 150% (PFAS) If the result is outside the above ranges, the result must be < 3x Standard Deviation of the Historical Mean (calculated over past 12 months)
Method Blanks	Each blank is analysed as per the original samples.	Analytical Result < LOR
Note: LOR = Laboratory Limit of Reporting or the minimum detection limit for a particular analyte.		

3.0 DATA VALIDATION

For the purpose of assessing the quality of data presented in this report, Golder-Douglas collected and analysed QC samples (blind replicate samples), while the laboratory completed their own QC. This section of is focused on the presentation of results of these QC samples, adherence to QA systems and discussion of deviations, if any, from the Data Acceptance Criteria (DAC) as detailed in **Section 2.3**.

All data generated by the analytical laboratories were appropriately reviewed and underwent comprehensive validation as part of reporting (refer to **Appendix J1**).

The primary objective of the data validation process is to ensure that the data reported can be used to achieve the project objectives. The validity of all analytical data reported was assessed by critical review of the QC check sample results.

3.1 Field QA/QC

All fieldwork was undertaken by experienced field staff in accordance with established sampling protocols. Adherence to the sampling protocols such as decontamination of non-dedicated equipment, use of correct laboratory supplied sampling containers, collection of field QAQC samples and correct storage of samples by experienced field staff is intended to ensure the quality and representativeness of the samples collected.

3.1.1 Blind and Split Replicate Samples

The blind replicate samples (field duplicate) were tested for a range of analytes generally consistent with the primary samples and the results of the RPD calculations are presented in the data validation sheets in **Appendix J1**.

The split replicate sample (field triplicate) were tested for the same analysis as the blind replicate and the primary sample. The results of the RPD calculations are presented in in the data validation sheets in **Appendix J1**. The results of the RPD calculations indicate that there are variances greater than the acceptance criteria:

- Soils:
  - The RPD for Sum of Common 16 PAHs (111.11%) for blind replicate sample QCA103 exceeded the DQO acceptance criteria. It is noted that individual PAH analytes were within the acceptable DQOs, therefore this exceedance is unlikely to significantly impact the overall integrity of the dataset. It is further noted that the exceedance may be due to the small laboratory sub-sample size as the sample was collected from natural material which is generally expected to be homogenous.
  - The RPD recoveries for lead (192.16%) and zinc (177.78%) for blind replicate sample QCA109 exceeded the DQO acceptance criteria. It is noted that the sample was collected at the fill / natural soil interface where variance in soil quality is expected.
- Groundwater:
  - The RPD recovery for ionic balance (lab calculated) (79%) for blind replicate sample QCA200 exceeded the DQO acceptance criteria. Ionic balance is calculated by the laboratory using the major cations and anions. Given that the RPDs for the major cations and anions were within the acceptable DQOs, the exceedance for ionic balance (a calculated value) is not expected to impact the overall integrity of the results.
  - The RPD recoveries for nitrogen (total) (101.37%), Sum of PFHxS and PFOS (lab reported) (82.35%) and Sum of PFASs (n=28) (82.35%) for split replicate sample QCB200 exceeded the DQO acceptance criteria. For nitrogen this is likely the result of differences in inter-laboratory handling, extraction and/or analytical techniques. The RPD exceedance for PFAS are related to summations of individual compounds. It is noted that the RPDs for the individual PFAS compounds were within the acceptable DQOs.

The overall rate of QA/QC sampling for soil analysis met the target of 5% each for primary and secondary samples with the exception of PFAS in soil, EIL parameters, asbestos and acid sulfate soil analysis. It is noted that blind replicates and spilt replicate samples were generally not able to be collected for these analysis due to the limited sample volume available (i.e. PFAS, EIL parameters (specifically clay content) and acid sulfate soil analysis all require separate containers in addition to the standard glass jar collected). The analysis rates for soil are summarised in **Table 2**.

Six groundwater samples were collected during the environmental investigations, with one blind replicate and one split replicate collected. Six soil vapour samples were collected during the environmental investigations, with one blind replicate and one split replicate collected. Therefore, the overall rate of replicate analyses for groundwater and soil vapour samples met the target rate of 5%.

Overall, the repeatability of the analytical data meets the objectives for the project.

Table 2: Soil blind replicate and split replicate analysis rates.

Analyte	No of Primary Samples	No of blind replicate samples	Blind Replicate Analysis Rate (%)	No of split replicate samples	Split Replicate Analysis Rate (%)
TRH	55	7	12.7%	7	12.7%
BTEXN	60	7	11.7%	7	11.7%
PAHs	55	7	12.7%	7	12.7%
Metals (8)	55	7	12.7%	7	12.7%
OCPs / OPPs	23	2	8.7%	3	13.0%
Phenols	23	2	8.7%	3	13.0%
PCB	24	2	8.3%	3	12.5%
VOCs	24	3	12.5%	4	16.7%
PFAS	2	0	0.0%	0	0.0%
EIL parameters	3	0	0.0%	0	0.0%
Asbestos in soil	24	1	4.2%	2[1]	8.3%
ASS	21	0	0.0%	0	0.0%

3.1.2 Trip Blanks and Trip Spikes

A total of five trip blanks were submitted with the soil samples and two with the groundwater samples to the primary laboratory. The concentrations of BTEXN and TRH C_6-C_{10} compounds in the trip blanks were below the respective laboratory LORs and therefore conformed to the DAC. Trip blank analytical data is contained within **Table H** and **Table I**.

A total of five trip spikes were submitted with the soil samples and two with the groundwater samples to the primary laboratory. A review of trip spike recoveries indicates that the recoveries reported were within the acceptable control limits of 70-130% with the exception of the trip spike (SRT_TS106) submitted with soil samples as part of batch ES1831696. The recoveries for BTEX and TRH C_6-C_{10} compounds ranged between 47% and 69%.

[1] Asbestos (absence/presence) only

Trip spike SRT_TS106 was prepared by the primary lab (ALS) on the 15 October 2018 and supplied on the 19 October 2018. The trip spike was kept in a fridge prior to the sampling program and on ice during the sampling program with the samples taken. The soil samples were placed on ice immediately following collection on Saturday 20 October 2018, and kept on ice until they were placed in a refrigerator on the afternoon of the same day of sample collection. The samples were then sent to the laboratory on Monday 22 October 2018 and arrived at the laboratory at 3.2°C. The trip spike was analysed on Friday 30 October 2018. The lower than expected recovery is likely to be due to the age of the trip spike and delay in analysis, rather than inadequate sample preservation as the trip spike was kept in a fridge prior to the sampling program and on ice during the sampling program. Therefore, it is considered that loss of volatiles (if present in the soil samples) would be minimal despite poor trip spike recoveries.

3.1.3 Rinsate Blank

The results of the rinsate analysis were lower than the LOR for all scheduled analytes with the exception of rinsate sample RB100 collected on 6 October 2018 which reported 0.02 mg/L TRH C_6-C_9 Fraction which is equal to the detection limit (batch ES182995).

The results of the rinsate analysis are presented in **Table G**.

3.2 Laboratory QA/QC

The laboratories used were required to be NATA registered for the analyses undertaken. The laboratories were required to conduct their own internal quality procedures to verify their results. Details of the internal laboratory QA/QC results are presented in the endorsed results supplied by the laboratories (**Appendix I**).

3.2.1 Laboratory Duplicate Samples

A review of laboratory internal duplicates indicates that laboratory duplicates were generally within the laboratory control limit or below the LOR. Laboratory duplicate exceedances were reported in seven batches including:

- Batch ES1829955 (soil) - The laboratory duplicate RPDs for copper (48.2%) in sample SRT-BH420-0.5, lead (100.0%) and zinc (20.2%) in sample SRT_BH422_1.5, and sum of polycyclic aromatic hydrocarbons (47.1%) in sample SRT_BH422_0.5 were outside of the laboratory based DQOs.
- Batch ES1830703 (soil) – The laboratory duplicate RPDs for phenanthrene (30.3%), fluoranthene (33.7%), pyrene (34.5%) and sum of polycyclic aromatic hydrocarbons (38.4%) in sample SRT_BH414_0.4 were outside of the laboratory based DQOs.
- Batch ES1832159 (soil) – The Laboratory duplicate RPD recoveries for anthracene (21.6%), fluoranthene (26%), pyrene (26.7%), benz(a)anthracene (28.9%), chrysene (30.5%), benzo(b+j)fluoranthene (28.4%), benzo(k)fluoranthene (32.4%), benzo(a)pyrene (25.4%), indeno(1.2.3.cd)pyrene (21.07%), sum of polycyclic aromatic hydrocarbons (23.9%) and benzo(a)pyrene TEQ (zero) (25.7%) in sample SRT-BH425-0.4, and the laboratory duplicate RPD recovery for perfluorohexanoic acid (PFHxA) (24.1%) in an anonymous sample were outside of the laboratory based DQOs.
- Batch 204227 (soil) – The laboratory duplicate RPD recovery for lead (42%) in sample SRT-QCB108 was outside of the laboratory based DQOs.

The laboratory duplicate exceedances are generally associated with samples collected from fill material, and as such sample heterogeneity contributing to high RPDs is expected. The high RPD may also be due to the size of the sub-sample used for analysis by the laboratory.

RPD exceedance reported in batch ES1832159 for PFHxA was for an anonymous sample. This exceedance is unlikely to have an impact on the validity of the dataset as the sample may not be representative of the project sample matrices.

Further information on the laboratory duplicate exceedances is provided in the data validation sheets provided in **Appendix J1**.

3.2.2 Laboratory Control Spike Samples

Recoveries for all laboratory control spike samples (LCS) conformed to the acceptance criteria specified within the DQOs.

3.2.3 Method Blanks

The primary laboratory method blanks were tested for the range of contaminants that were analysed in each batch, as determined from the COC documentation accompanying the samples. Laboratory results reported were below the laboratory reporting limits. Overall, the method blank results indicate satisfactory hygiene in sample preparation and analysis.

3.2.4 Matrix Spikes

A review of matrix spike recoveries indicates matrix spike recoveries were within the laboratory control limits with the exception of those in the following:

- Batch ES1829955 (soil) – The matrix spike recovery for zinc (144%) in sample SRT-BH420-0.5 was outside of acceptable DQOs.
- Batch ES1830703 (soil) – The matrix spike recovery for total phenols (55.5%) in an anonymous sample and matrix spike recovery for pyrene (22.0%) in sample SRT-BH414_0.4 were outside of acceptable DQOs.
- Batch ES1832028 (soil TCLP) – The matrix spike recovery for lead in sample SRT-BH416-0.25 was not determined.
- Batch ES1832159 (soil) – The matrix spike recoveries for perfluorobutane sulfonic acid (PFBS), perfluorohexane sulfonic acid (PFHxS), perfluorooctane sulfonic acid (PFOS), perfluoropentanoic acid (PFPeA), perfluorohexanoic acid (PFHxA), perfluorooctanoic acid (PFOA), perfluorononanoic acid (PFNA), perfluorodecanoic acid (PFDA), perfluorododecanoic acid (PFDoDA), 6:2 fluorotelomer sulfonic acid (6:2 FTS), 8:2 fluorotelomer sulfonic acid (8:2 FTS) and 10:2 fluorotelomer sulfonic acid (10:2 FTS) were not determined, and perfluoroheptane sulfonic acid (PFHpS) (263%), perfluorobutanoic acid (PFBA) (335%) and perfluorotridecanoic acid (PFTrDA) (205%) were outside of acceptable DQOs for an anonymous sample.
- Batch ES1832164 (water) – The matrix spike recoveries for sulfate as SO4 turbidimetric and nitrite + nitrate as N for sample SRT-BH419 were not determined.

The matrix spike exceedances for batch ES1829955 and ES1830703 were attributed to sample heterogeneity by the laboratory. It is noted that the samples were collected from fill material and as such sample heterogeneity is expected.

Matrix spike recovery exceedances were reported for anonymous samples in batch ES1830703 and ES1832159. These exceedances are not expected to affect the integrity of the results as anonymous samples are unlikely to be representative of project matrices.

Matrix spike recoveries in batches ES1832028, ES1832159 and ES1832164 were not determined as the background level was greater than or equal to 4x spike level.

Further information on the matrix spike recoveries are provided in the data validation sheets provided in **Appendix J1**.

3.2.5 Surrogates

A review of surrogate spike recoveries indicates that surrogate recoveries were generally within acceptable control limits with the exception of the following:

- Batch ES1829955 (soil) – The surrogate recoveries of 2-chlorophenol-D4 in sample SRT_BH412_0.5 (63.0%), and 2.4.6-Tribromophenol in samples SRT_BH412_0.5 (27%) and QCA102 (35.2%) were less than the lower DQO.

- Batch ES1831696 (soil) – The surrogate recovery of DEF in water in sample SRT_RB106 (64%) was less than the lower DQO.
- Batch ES1832159 (soil) – The surrogate recovery for 2-chlorophenol-D4 (65.1%) and 2.4.6-tribromophenol (24%) in sample SRT-BH418-0.2, and 2.4.6-tribromophenol (37.2%) in sample SRT-BH424-3.0 were less than the lower DQO.

The surrogate recoveries in the batches listed above were less than the lower DQO indicating the potential for under-reporting.

Further information on the surrogate recoveries are provided in the data validation sheets provided in **Appendix J1**.

3.2.6 Sample Holding Times

All samples were received by the analytical laboratories in correctly preserved and chilled containers with no reported breakages. Sample receipt notifications are presented with the laboratory reports in **Appendix I**.

A review of the analytical certificates indicates that the majority of analyses were performed within the required holding times. The following holding time breaches were noted:

- Batch ES1829955 (soil) – Samples SRT-BH420-3.0, SRT-BH420-4.0-4.45 and SRT-BH420-5.5-5.95 were analysed 9 days overdue for SPOCAS. It is noted that samples were collected on 6 Oct 2018 and frozen by the laboratory on receipt on 10 Oct 2018 therefore there is a low potential to impact the quality of the dataset.
- Batch ES1831696 (soil) – Samples SRT-TB106, SRT-TS106 and Trip Spike Control were analysed 1 day overdue for TPH, TRH - NEPM 2013 Fractions and BTEXN. Sample SRT-QCA106 was analysed 6 days overdue for VOCs (vinyl chloride and styrene) and 2 days overdue for total phenols. It is noted that holding time exceedances are generally marginal and samples were stored in appropriate conditions.
- Batch ES1832028 (soil TCLP) – Samples SRT-BH412-0.5 and SRT-BH422-0.5 were extracted 11 days overdue for non-volatile leach (i.e. semi-volatile organics (PAHs TCLP)) and samples SRT-BH414-0.4, SRT-BH423-0.5 and SRT-BH425-0.15 were extracted 4 days overdue for non-volatile leach (i.e. semi-volatile organics (PAHs TCLP)). It is noted that the samples were appropriately stored by ALS and that TCLP data will be used to provide an indication of preliminary in-situ waste classification only and will not be used for the assessment of site suitability.
- Batch ES1833432 (soil) – Sample SRT_BH410_1.5 was extracted 1 day overdue for pH 1:5. It is noted that holding time exceedances are generally marginal and samples were stored in appropriate conditions. In addition, there is no assessment criterion for pH and there is a low potential to impact the quality of the dataset.
- Batch ES1833627 (soil TCLP) – Samples SRT-BH425-0.4 and SRT-BH425-1.0 were 3 days overdue for extraction of non-volatile leach (i.e. semi-volatile organics (PAHs TCLP)). It is noted that the samples were appropriately stored by ALS and that TCLP data will be used to provide an indication of preliminary in-situ waste classification only and will not be used for the assessment of site suitability.

3.3 Data Validation Summary

Soil, soil vapour and groundwater samples were collected by experienced Golder-Douglas field staff, under established Golder protocols. Golder-Douglas field staff are trained in sample collection and handling techniques.

The validity of analytical data was assessed by review of the field and laboratory QC sample results. This was performed in accordance with the NEPM (NEPC 1999 amended 2013). The analytical data validation process involves the checking of analytical procedure compliance and the assessment of accuracy, precision and completeness of analytical data.

Analytical data validation summary sheets are presented in **Appendix J1.** On the basis of the outcome of the validation procedure employed, the overall quality of the analytical data is considered to be of an acceptable standard for interpretive use.

Additionally, in accordance with the NSW EPA (2017) guidelines, DQIs (Completeness, Comparability, Representativeness, Precision and Accuracy) have also been considered, where appropriate.

APPENDIX K

Waste Disposal Record and Classification Report

15 February 2019 Reference No. 1791865-011-L-Rev0

Transport for New South Wales

WASTE CLASSIFICATION – SOIL WASTE FROM DRILLING PROGRAM AT THE SYDNEY METRO SITE, 49-67 BOTANY ROAD, WATERLOO NSW

1.0 INTRODUCTION

Golder Associates Pty Ltd (Golder) has been engaged by Transport for New South Wales (TfNSW) to undertake a Phase 2 Environmental Site Assessment (ESA) of the Sydney Metro site located along Botany Road, Waterloo, between Raglan Street and Wellington Street (hereby referred to as the 'site'). Excess spoil collected during the Phase 2 investigation works requires a waste classification assessment to ensure appropriate off-site disposal.

Intrusive Phase 2 investigation works were undertaken at the site as part of the Sydney Metro City South-West project. The works, including drilling and well installation, were undertaken on the 6, 7, 13, 14, 20, 21, 27 and 28 October 2018. Soil waste was collected from hand augering and drilling at:

- Six borehole locations which were converted into soil vapour monitoring wells. The soil from these locations (SRT-BH408, SRT-BH415, SRT-BH416, SRT-BH417, SRT-BH421 and SRT-BH422) was placed in one 200 L drum which was labelled and sealed; and
- Two borehole locations which were converted to groundwater monitoring wells. The soil from these locations (SRT-BH409 and SRT-BH420) was placed in two individual 200 L drums which were labelled and sealed.

Based on a preliminary review, a number of former land use activities were identified which may have contributed to potential contamination sources including:

- Dry cleaners;
- Automotive garage and service station;
- Automotive centre;
- Historical filling and demolition of structures / buildings; and
- Historical and on-going commercial/industrial activities on the site and surrounding the site.

Golder collected and analysed soil samples from each borehole location where soil waste was generated. Based on the of the sampling and analytical program, this waste classification letter has been prepared in accordance with the New South Wales Environmental Protection Authority's *Waste Classification Guidelines Part 1: Classifying waste*, November 2014 (EPA 2014) (the *Waste Classification Guidelines)*.

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2.0 WASTE CLASSIFICATION PROCESS

The *Waste Classification Guidelines* (EPA 2014) includes a six step process for classification of waste. The six steps, which are to be applied in order, are identified in the table below.

Step 1: Is the waste special waste?	Yes, asbestos was detected in some boreholes (see **Section 4.0**).
Step 2: Is the waste liquid waste?	No, based on the field observations (see **Section 3.0**).
Step 3: Is the waste pre-classified?	No, the waste is not a pre-classified material identified in EPA 2014.
Step 4: Does the waste possess hazardous characteristics?	No, the waste would not be defined as a dangerous good under the relevant classes or divisions of the Transport of Dangerous Goods Code.
Step 5: Determining a waste's classification using chemical assessment	Chemical assessment of the waste material was performed (see **Section 3.0** and **Section 4.0**).
Step 6: Is the waste putrescible or non-putrescible?	Based on the field observations the waste material is considered to be non-putrescible (see **Section 3.0** and **Section 4.5**).

The waste classification for the material is identified in **Section 5.0**.

3.0 FIELDWORK AND ANALYTICAL SCHEDULE

A total of 19 boreholes were advanced across the site. Soil waste was generated from six boreholes converted to soil vapour monitoring wells and two boreholes converted to groundwater monitoring wells. The soil vapour monitoring wells were generally advanced to approximately 3 m below ground level (mbgl) and the groundwater monitoring wells to 7 mbgl. The soil profile was logged by an environmental scientist and samples collected for laboratory analysis.

The samples collected were transported under chain of custody protocols to ALS Environmental (ALS) and Envirolab Services (ELS) for laboratory analysis. ALS and ELS are National Association of Testing Authorities, Australia (NATA) accredited for the analyses conducted.

The borehole logs where soil waste was generated are included in **Attachment A**. The concrete hardstand was generally underlain by fill material of varying thicknesses which was generally described as grey or brown gravelly sand or sand. Demolition and anthropogenic materials including charcoal, concrete, sandstone cobbles, tiles and brick were also identified within the fill material. Natural material or reworked natural material was identified underlying the fill material which was generally described as a silty sand or sand. No olfactory evidence of contamination was identified in the boreholes where soil waste was generated.

Samples from each borehole were analysed for a suite of contaminants of potential concern including:

- Heavy metals (arsenic, cadmium, copper, chromium (total), lead, mercury, nickel and zinc);
- Total recoverable hydrocarbons (TRH) / total petroleum hydrocarbons (TPH);
- Benzene, toluene, ethyl benzene and xylenes (BTEX);
- Polycyclic aromatic hydrocarbons (PAHs);
- Total phenolics;

- Organochlorine pesticides (OCPs) and organophosphate pesticides (OPPs);
- Polychlorinated biphenyls (PCBs);
- Acid sulfate soil (ASS) analysis; and
- Asbestos.

Samples from select boreholes were also analysed for the following:

- Volatile organic compounds (VOCs); and
- Per- and polyfluoroalkyl substances (PFAS).

Photographs of a selection of the samples collected are shown in **Attachment B**.

4.0 LABORATORY ANALYTICAL RESULTS AND DISCUSSION

The waste classification has been undertaken separately for each 200 L drum including:

- Drum: SRT-BH409;
- Drum: SRT-BH420; and
- Drum: SRT-Soil Vapour.

The laboratory analytical results are presented in **Table A to C (Attachment C)** and have been compared against the threshold concentrations provided in the *Waste Classification Guidelines* (EPA 2014). Laboratory certificates are included in **Attachment D**.

4.1 Drum: SRT-BH409

Heavy Metals

Laboratory analysis detected concentrations of heavy metals in the samples analysed. Individual concentrations of metals were below the maximum allowable Specific Contaminant Concentration (SCC) value for classification as general solid waste (i.e. CT1 values) without TCLP analysis provided in the Waste Classification Guidelines (EPA 2014).

Organics

Concentrations of TPH, BTEX, PAHs, OCPs, OPPs, PCBs, phenols and VOCs were below the respective maximum CT1 values for general solid waste.

Asbestos

There were no reported detections of asbestos in the samples analysed or observations of asbestos in the samples collected.

Acid Sulfate Soils

Acid sulfate soils (ASS) analysis was undertaken in natural soils. The laboratory analytical results do not indicate that actual or potential ASS are present.

4.2 Drum: SRT-BH420

Heavy Metals

Laboratory analysis detected concentrations of heavy metals in the samples analysed. With the exception of lead in two samples (SRT-BH420-0.5 and SRT-BH420-1.0), and mercury in one sample (SRT-BH420-1.0)

concentrations of metals were below the maximum allowable SCC value for classification as general solid waste (i.e. CT1 values) without TCLP analysis.

Individual concentrations of lead exceeded the respective maximum SCC values for classification as general solid waste (CT1 values) without TCLP analysis in SRT-BH420-0.5 (618 mg/kg) and SRT-BH420-1.0 (628 mg/kg). The concentration of mercury in sample SRT-BH420-1.0 (5.8 mg/kg) also exceeded the maximum SCC values for classification as general solid waste (CT1 values) without TCLP analysis.

The soil encountered at both SRT-BH420-0.5 and SRT-BH420-1.0 was described as fill material (gravelly silty clayey sand) with fragments of brick, concrete, sandstone and tiles (refer to **Attachment A**), and concentrations of lead reported in both samples were similar. As such, TCLP analysis for lead was undertaken on sample SRT-BH420-1.0 which reported the higher concentration of lead. TCLP analysis for mercury was also undertaken on sample SRT-BH420-1.0.

The TCLP analysis results were less than the respective Leachable Concentrations for general solid waste (i.e. the TCLP1 values). Therefore, based on the total and TCLP metal analysis results, the waste classification would be general solid waste.

Organics

Concentrations of TPH, BTEX, PAHs, OCPs, OPPs, PCBs and phenols were below the respective maximum CT1 values for general solid waste provided in the Waste Classification Guidelines (EPA 2014).

Asbestos

Asbestos was identified in one of the soil samples collected from SRT-BH420.

Acid Sulfate Soils

Acid sulfate soils (ASS) analysis was undertaken in natural soils. The laboratory analytical results indicate that actual ASS are present and that liming at a rate of 2 kg $CaC0_3$/tonne is required to neutralise the soil.

As indicated in the *ASSAM* (ASSMAC, 1998), while there are a range of neutralising agents available, generally agricultural lime ($CaCO_3$) with a pH of about 8.2 is the most widely applied neutralising agent and the least hazardous.

Based on the liming rate of 2 kg $CaC0_3$/tonne provided by the laboratory, approximately 1 kg of lime was added to the 200 L drum.

4.3 Drum: SRT-Soil Vapour

Heavy Metals

Laboratory analysis detected concentrations of heavy metals in the samples analysed. With the exception of lead in two samples (SRT-BH416-0.25 and SRT-BH416-0.5), concentrations of metals were below the maximum allowable SCC value for classification as general solid waste (i.e. CT1 values) without TCLP analysis.

Individual concentrations of lead exceeded the respective maximum SCC values for classification as general solid waste (CT1 values) without TCLP analysis in SRT-BH416-0.25 (813 mg/kg) and SRT-BH416-0.5 (276 mg/kg). The soil encountered at SRT-BH416-0.25 was described a gravelly sand with sandstone fragments and SRT-BH416-0.5 was described as a silty sand with trace gravel (refer to **Attachment A**).

TCLP analysis for lead was undertaken on sample SRT-BH416-0.25 which reported the higher concentration of lead. The TCLP analysis result for lead exceeded the respective Leachable Concentrations for general solid

waste (i.e. the TCLP1 values). Therefore, based on the total and TCLP metal analysis results, the waste classification would be restricted solid waste.

Organics

Concentrations of TPH, BTEX, OCPs, OPPs, PCBs, phenols, VOCs and PFAS were below the respective maximum CT1 values for general solid waste provided in the Waste Classification Guidelines (EPA 2014) and the Addendum to the Waste Classification Guidelines (EPA 2016).

Concentrations of benzo(a)pyrene exceeded the maximum CT1 values for general solid waste in samples SRT-BH421-0.5 (in QCA102 (1 mg/kg) and QCB102 (0.85 mg/kg)), SRT-BH422-0.5 (1.4 mg/kg) and SRT-BH422-1.5 (0.9 mg/kg).

The soil encountered at both SRT-BH422-0.5 and SRT-BH422-1.5 was described as sand with silt. TCLP analysis for benzo(a)pyrene was undertaken on sample SRT-BH422-0.5 which reported the higher concentration of benzo(a)pyrene. The TCLP analysis result was less than the Leachable Concentration for general solid waste (i.e. the TCLP1 values). TCLP analysis was not undertaken on samples QCA102 or QCB102 (from SRT-BH421-0.5).

Asbestos

There were no reported detections of asbestos in the samples analysed or observations of asbestos in the samples collected.

Acid Sulfate Soils

Acid sulfate soils (ASS) analysis was undertaken in natural soils. The laboratory analytical results do not indicate that actual or potential ASS are present.

4.4 Statistical Analysis

Statistical analysis was not undertaken given that calculating the upper confidence limit of sample concentrations for a particular drum would not have reduced the classification. Furthermore, it is generally inappropriate to estimate the upper confidence limit for sample sizes of less than n = 8 to 10, and as such statistical analysis was not considered appropriate for drums SRT-BH409 and SRT-BH420.

4.5 Assessment of Putrescibility

The *Waste Classification Guidelines* (EPA 2014) state that certain materials, including soils, are generally not classified as putrescible. The fill on the site was described as gravelly sand or sand containing demolition and anthropogenic inclusions. The fill material was underlain by sand or silty sand. As such, the proposed waste material is considered to be non-putrescible.

5.0 CLASSIFICATIONS

Based on the results of laboratory analysis and the procedures detailed in the *Waste Classification Guidelines* (EPA 2014) the spoil to be excavated from the site is classified as per **Table 1** for the purpose of off-site disposal.

Table 1: Waste Classification

Drum	Boreholes	Waste Classification
SRT-BH409	SRT-BH409	***General Solid Waste (non-putrescible)***

Drum	Boreholes	Waste Classification
SRT-BH420	SRT-BH420	***General Solid Waste (non-putrescible) / Special Waste (asbestos)***
SRT-Soil Vapour	SRT-BH408, SRT-BH415, SRT-BH416, SRT-BH417, SRT-BH421 and SRT-BH422	***Restricted Solid Waste (non-putrescible)***

6.0 CLOSURE

Your attention is drawn to the document titled - “Important Information Relating to this Report”, which is included in **Attachment E** of this report. The statements presented in that document are intended to inform a reader of the report about its proper use. There are important limitations as to who can use the report and how it can be used. It is important that a reader of the report understands and has realistic expectations about those matters. The Important Information document does not alter the obligations Golder Associates has under the contract between it and its client.

We trust the information presented herein meets your current requirements, however if you require any further information please do not hesitate to contact either of the undersigned on 9478 3900.

Golder Associates Pty Ltd

Rita Bonetti
Environmental Scientist

Shane Doyle
Principal Environmental Scientist

RB/SPD/rb

Attachments: Attachment A – Borehole Logs
Attachment B – Photographs
Attachment C – Tables
Attachment D – Laboratory Certificates of Analysis
Attachment E – Important Information Relating to this Report

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ATTACHMENT A

Borehole Logs

FINAL REPORT OF BOREHOLE: SRT_BH408

SHEET: 1 OF 1

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333597.5 m E 6247636.5 m N MGA94 56
SURFACE RL: 15.66 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 3.20 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: TA + RB DATE: 6-10-18
CHECKED: DATE:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	15.66	SRT_BH408_0.2 DS 0.00 m R = 0A				CONCRETE			
				0.20								
				15.46	PID = 0.5 ppm				FILL: SAND fine grained, grey, trace charcoal, well sorted	D - M		
				0.50								
HA			0.5	15.16	SRT_BH408_0.5 DS 0.50 m R = 0A PID = 0.1 ppm				SAND fine grained, uniform, pale grey			NATURAL
				0.80								
				14.86					: as above white, uniform	D		
			1.0		SRT_BH408_1.0 DS 1.00 m R = 0A							
				1.20	PID = 0.2 ppm							
				14.46					SAND fine to medium grained, brown red, with silt, well sorted			
			1.5		SRT_BH408_1.5 DS 1.50 m R = 0A PID = 0.2 ppm					D - M		
PT	L	GWNE									L	
			2.0		SRT_BH408_2.0 U 2.00 m R = 0A PID = 0.7 ppm							
			2.5							M		
				2.60								
				13.06					SAND fine grained, uniform, pale yellow			
			3.0		SRT_BH408_3.0 U 3.00 m R = 0A PID = 0.9 ppm							
				12.46					END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED Soil Vapour Probe Installed			
			3.5									
			4.0									
			4.5									
			5.0									

This report of borehole must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

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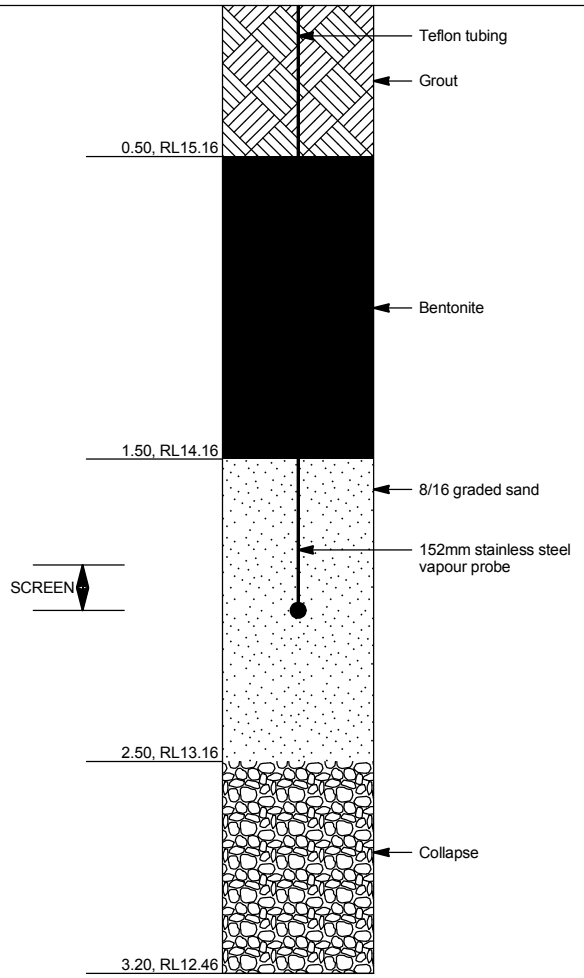
GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH408

SHEET: 1 OF 1

CLIENT:	TfNSW	COORDS:	333597.5 m E 6247636.5 m N MGA94 56	DRILL RIG:	Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL:	15.66 m DATUM: AHD	CONTRACTOR:	Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION:	-90°	LOGGED: TA + RB	DATE: 6-10-18
JOB NO:	1791865	HOLE DEPTH:	3.20 m	CHECKED:	DATE:

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	ID BH408 Type Tip Depth & RL 2.00 m 13.66 m AHD Installation Date 06-10-18
CC		0.0	15.66		CONCRETE	
			0.20			
			15.46		SAND	
			0.50			
HA		0.5	15.16		SAND	
			0.80			
			14.86			
		1.0	1.20			
			14.46		SAND	
PT	GWNE	1.5				
		2.0				
		2.5	2.60			
			13.06		SAND	
		3.0	3.20			
			12.46		END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED Soil Vapour Probe Installed	
		3.5				
		4.0				
		4.5				
		5.0				



This report of standpipe installation must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

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FINAL REPORT OF BOREHOLE: SRT_BH409

SHEET: 1 OF 2

CLIENT:	TfNSW	COORDS: 333588.9 m E 6247633.6 m N MGA94 56	DRILL RIG: Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL: 15.46 m DATUM: AHD	CONTRACTOR: Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°	LOGGED: TA + RB DATE: 6-10-18
JOB NO:	1791865	HOLE DEPTH: 7.20 m	CHECKED: DATE:

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	15.46 *0.10*					ASPHALT			
HA	H			15.36 *0.20* 15.26	SRT_409_0.1 DS 0.10 m R = 1A PID = 0.3 ppm				FILL: Sandy GRAVEL fine to medium grained, sub-angular to angular, poorly sorted, dark brown black, fine to medium grained sand	D	D	
				0.40 15.06					FILL: SAND fine to medium grained, dark brown black			large fragments of concrete approx. 10cm @ 0.3-0.4mbgl NATURAL
			0.5		SRT_409_0.5 DS 0.50 m QCA101 / QCB101 R = 0A PID = 0.4 ppm				SAND fine grained, uniform, pale grey white			
			1.0		SRT_409_1.0 DS 1.00 m R = 0A PID = 0.2 ppm							
				1.40 14.06					: as above dark brown, some silt			
			1.5		SRT_409_1.5 DS 1.50 m R = 0A PID = 0.3 ppm					D - M		
				1.90 13.56					: as above pale brown, no silt			
			2.0		SRT_409_2.0 U 2.00 m R = 0A PID = 0.6 ppm							
PT	L		2.5								L	
				3.00 12.46	SRT_409_3.0 U 3.00 m R = 0A PID = 0.4 ppm				: as above brown / pale red	M		
		▽	3.5									
			4.0		SRT_409_4.0 U 4.00 m R = 0A PID = 0.3 ppm					W		
			4.5									
			5.0									

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FINAL REPORT OF BOREHOLE: SRT_BH409

SHEET: 2 OF 2

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333588.9 m E 6247633.6 m N MGA94 56
SURFACE RL: 15.46 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 7.20 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: TA + RB DATE: 6-10-18
CHECKED: DATE:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
PT			5.0						SAND fine grained, uniform, pale grey white		L	NATURAL
			5.5									
			6.0	6.00 9.46								
ADV	L		6.5						CLAY medium to high plasticity, brown orange	W	St	
			7.0									
				8.26					END OF BOREHOLE @ 7.20 m TARGET DEPTH REACHED Groundwater Well Installed			
			7.5									
			8.0									
			8.5									
			9.0									
			9.5									
			10.0									

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GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH409

SHEET: 1 OF 2

CLIENT:	TfNSW	COORDS: 333588.9 m E 6247633.6 m N MGA94 56		DRILL RIG: Geoprobe 7822 DT	
PROJECT:	Sydney Metro	SURFACE RL: 15.46 m DATUM: AHD		CONTRACTOR: Matrix	
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°		LOGGED: TA + RB	DATE: 6-10-18
JOB NO:	1791865	HOLE DEPTH: 7.20 m		CHECKED:	DATE:

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	
CC		0.0	15.46		ASPHALT	
			0.10 15.36		SANDY GRAVEL	
			0.20 15.26		SAND	
			0.40 15.06		SAND	
HA		0.5				Grout
						uPVC Class 18 50mm casing
		1.0				1.00, RL14.46
			1.40 14.06		SAND	
		1.5				Bentonite
			1.90 13.56		SAND	
		2.0				2.00, RL13.46
		2.5				
PT			3.00 12.46		SAND	Filter pack 8/16" graded gravel
		3.5				Pre pack 50mm slotted screen
		4.0				
		4.5				
		5.0				

This report of standpipe installation must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

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GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH409

SHEET: 2 OF 2

CLIENT:	TfNSW	COORDS: 333588.9 m E 6247633.6 m N MGA94 56		DRILL RIG: Geoprobe 7822 DT	
PROJECT:	Sydney Metro	SURFACE RL: 15.46 m DATUM: AHD		CONTRACTOR: Matrix	
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°		LOGGED: TA + RB	DATE: 6-10-18
JOB NO:	1791865	HOLE DEPTH: 7.20 m		CHECKED:	DATE:

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	
PT		5.0			SAND	5.50, RL9.96 End cap
		5.5				
			6.00 9.46			
		6.0			CLAY	
ADV		6.5				1/4" coated bentonite
		7.0	*7.20* 8.26			7.20, RL8.26
					END OF BOREHOLE @ 7.20 m TARGET DEPTH REACHED Groundwater Well Installed	
		7.5				
		8.0				
		8.5				
		9.0				
		9.5				
		10.0				

This report of standpipe installation must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

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GAP 8_16.4 LIB.GLB Log GAP WELL 3 SYDNEY METRO.GPJ <<DrawingFile>> 12-11-2018 13:16 8.30.004 Datgel Tools

FINAL REPORT OF BOREHOLE: SRT_BH414

SHEET: 1 OF 1

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333560.7 m E 6247687.7 m N MGA94 56
SURFACE RL: 15.55 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 0.50 m

DRILL RIG:
CONTRACTOR: Matrix
LOGGED: RB DATE: 13-10-18
CHECKED: DATE:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	15.55 *0.12*								
HA	H	GWNE		15.43	BH414_0.15 DS 0.15 m R = 1A PID = 0.6 ppm BH414_0.4 DS 0.40 m R = 1A PID = 1 ppm				FILL: Gravelly SAND fine to medium grained, poorly graded, brown, fine to medium grained gravel	M		Fragments of brick, tile, concrete and charcoal
			0.5	15.05					END OF BOREHOLE @ 0.50 m REFUSAL ON BRICKS			
			1.0									
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									
			4.0									
			4.5									
			5.0									

This report of borehole must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

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FINAL REPORT OF BOREHOLE: SRT_BH415

SHEET: 1 OF 2

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333559.2 m E 6247720.5 m N MGA94 56
SURFACE RL: 15.39 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 5.20 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: RB DATE: 20-10-18
CHECKED: DATE:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	15.39					CONCRETE			
				0.19								
HA	H		0.5	15.20	BH415_0.2 0.20 m R = 1A PID = 1 ppm				FILL: Gravelly SAND fine to coarse grained, grey, fine to coarse grained, sub-angular to angular gravel			Road base cobbles ~10cm sandstone
				0.50						M	D	
				14.89	BH415_0.5 0.50 m QCA106 / QCB106 R = 1A PID = 0.8 ppm				: as above slightly more pale, gravel content decreasing			
				0.80								
			1.0	14.59					SAND fine to medium grained, uniform, brown, with silt			NATURAL
					BH415_1.0 1.00 m R = 0A PID = 1 ppm							
			1.5		BH415_1.5 1.50 m R = 0A PID = 0.4 ppm							
				1.90						D - M		
			2.0	13.49	BH415_2.0 2.00 m R = 0A PID = 0.5 ppm				: as above dark brown			
				2.20								
PT	L	▽		13.19					: as above pale grey brown			
			2.5									
				2.90							MD - L	
				12.49					SAND fine to medium grained, uniform, pale brown			
			3.0		BH415_3.0 3.00 m R = 0A PID = 0.3 ppm							
			3.5									
				4.00						W		
			4.0	11.39	BH415_4.0 4.00 m R = 0A PID = 0.3 ppm				: as above pale grey			
			4.5									
			5.0									

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FINAL REPORT OF BOREHOLE: SRT_BH415

SHEET: 2 OF 2

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333559.2 m E 6247720.5 m N MGA94 56
SURFACE RL: 15.39 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 5.20 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: RB DATE: 20-10-18
CHECKED: DATE:

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
PT	L		5.0	5.10 10.29	BH415_5.0 5.00 m R = 0A PID = 0.5 ppm				Silty SAND fine to medium grained, dark brown	W	MD - L	NATURAL
				10.19	BH415_5.1 5.10 m R = 0A				END OF BOREHOLE @ 5.20 m Soil Vapour Probe Installed			
			5.5									
			6.0									
			6.5									
			7.0									
			7.5									
			8.0									
			8.5									
			9.0									
			9.5									
			10.0									

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GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH415

SHEET: 1 OF 2

CLIENT:	TfNSW	COORDS:	333559.2 m E 6247720.5 m N MGA94 56	DRILL RIG:	Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL:	15.39 m DATUM: AHD	CONTRACTOR:	Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION:	-90°	LOGGED: RB	DATE: 20-10-18
JOB NO:	1791865	HOLE DEPTH:	5.20 m	CHECKED:	DATE:

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	ID BH415 Type Tip Depth & RL 2.00 m 13.39 m AHD Installation Date 20-10-18
CC		0.0	15.39		CONCRETE	
			0.19			
			15.20		GRAVELLY SAND	
		0.5	0.50			0.50, RL14.89
			14.89			
HA			0.80			
			14.59		SAND	
		1.0				
		1.5				1.50, RL13.89
			1.90			
			13.49			SCREEN
		2.0				
			2.20			
			13.19			
		2.5				
			2.90			
PT	▽		12.49		SAND	
		3.0				3.20, RL12.19
		3.5				
			4.00			
		4.0	11.39			
		4.5				
		5.0				

BH415

Teflon tubing
Grout
Bentonite
152mm stainless steel vapour probe with weight
8/16" gravel pack
Collapse

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GAP gINT FN. F17
RL1

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GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH415

SHEET: 2 OF 2

CLIENT:	TfNSW	COORDS: 333559.2 m E 6247720.5 m N MGA94 56		DRILL RIG: Geoprobe 7822 DT	
PROJECT:	Sydney Metro	SURFACE RL: 15.39 m DATUM: AHD		CONTRACTOR: Matrix	
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°		LOGGED: RB	DATE: 20-10-18
JOB NO:	1791865	HOLE DEPTH: 5.20 m		CHECKED:	DATE:

Drilling				Field Material Description		Instrumentation Details			
METHOD	WATER	DEPTH (metres)	*DEPTH* RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	ID	Type	Tip Depth & RL	Installation Date
						BH415		2.00 m 13.39 m AHD	20-10-18
PT		5.0	*5.10* 10.29		SAND				
			5.20 10.19		SILTY SAND			5.20, RL10.19	
					END OF BOREHOLE @ 5.20 m Soil Vapour Probe Installed				
		5.5							
		6.0							
		6.5							
		7.0							
		7.5							
		8.0							
		8.5							
		9.0							
		9.5							
		10.0							

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GAP gINT FN. F17
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GAP 8_16.4 LIB.GLB Log GAP WELL 3 SYDNEY METRO.GPJ <<DrawingFile>> 12-11-2018 13:16 8.30.004 Datgel Tools

FINAL REPORT OF BOREHOLE: SRT_BH416

SHEET: 1 OF 1

CLIENT:	TfNSW	COORDS: 333572.6 m E 6247728.1 m N MGA94 56	DRILL RIG: Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL: 15.56 m DATUM: AHD	CONTRACTOR: Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°	LOGGED: PK DATE: 7-10-18
JOB NO:	1791865	HOLE DEPTH: 3.20 m	CHECKED: DATE:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC	H	GWNE	0.0	15.56					CONCRETE			
				0.25								
				15.31	SRT_BH416_0.25				FILL: Gravelly SAND			Sandstone gravels between 0.25 - 0.90mbgl
				15.26	0.23 m				fine to coarse grained, brown, trace silt			
				0.40	R = 0A							
				15.16	PID = 0.4 ppm				: as above colour change to grey and pale grey/yellow			
				0.50								
			0.5	15.06	SRT_BH416_0.5				Silty SAND			
					0.50 m				fine to medium grained, dark brown, trace gravel			
					R = 0A				FILL: Silty SAND			
					PID = 0.7 ppm				fine to medium grained, dark brown, with gravel			
HA				0.90								
				14.66					SAND			NATURAL
			1.0		SRT_BH416_1.0				fine to medium grained, pale grey/brown			
					1.00 m							
					R = 0A							
				1.20	PID = 0.6 ppm							
				14.36					: as above with bands of silty sand, dark/red/brown			
			1.5		SRT_BH416_1.5							
					1.50 m							
					R = 0A							
					PID = 0.7 ppm							
PT	M-L									D		
				2.00								
			2.0	13.56	SRT_BH416_2.0				: as above pale grey/white			
					2.00 m							
					R = 0A							
					PID = 0.8 ppm							
				2.50								
			2.5	13.06					: as above brown			
				2.65								
				12.91					: as above pale grey			
			3.0		SRT_BH416_3.0							
					3.00 m							
					R = 0A							
					PID = 0.8 ppm							
				12.36					END OF BOREHOLE @ 3.20 m			
									TARGET DEPTH REACHED			
									Soil Vapour Probe Installed			
			3.5									
			4.0									
			4.5									
			5.0									

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GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH416

SHEET: 1 OF 1

CLIENT:	TfNSW	COORDS: 333572.6 m E 6247728.1 m N MGA94 56		DRILL RIG: Geoprobe 7822 DT	
PROJECT:	Sydney Metro	SURFACE RL: 15.56 m DATUM: AHD		CONTRACTOR: Matrix	
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°		LOGGED: PK	DATE: 7-10-18
JOB NO:	1791865	HOLE DEPTH: 3.20 m		CHECKED:	DATE:

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	ID BH416 Type Tip Depth & RL 2.00 m 13.56 m AHD Installation Date 07-10-18
CC		0.0	15.56		CONCRETE	BH416
			0.25			Teflon tubing
			15.30		GRAVELLY SAND	Grout
			15.26			
			0.40			
			15.16		SILTY SAND	
			0.50			
		0.5	15.06		SILTY SAND	
						0.60, RL14.96
HA						
			0.90			
			14.66		SAND	
		1.0				Bentonite
			1.20			
			14.36			
		1.5				1.60, RL13.96
	GWNE					SCREEN
			2.00			152mm stainless steel vapour probe with weight
		2.0	13.56			
PT						8/16" graded gravel filter pack
			2.50			
		2.5	13.06			
			2.65			
			12.91			
		3.0				3.20, RL12.36
			3.20			
			12.36		END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED Soil Vapour Probe Installed	
		3.5				
		4.0				
		4.5				
		5.0				

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FINAL REPORT OF BOREHOLE: SRT_BH420

SHEET: 1 OF 2

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333563.7 m E 6247771.9 m N MGA94 56
SURFACE RL: 16.32 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 7.50 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: RB DATE: 6-10-18
CHECKED: DATE:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	16.32					CONCRETE			
				0.35								
ADV				15.97					FILL: Silty Gravelly SAND brown and dark grey, with clay			fragments of igneous gravel, brick concrete, sandstone and tiles
			0.5		SRT_BH420_0.5 0.50 m							
			1.0		SRT_BH420_1.0 1.00 m						MD	
				1.35								
				14.97					SAND fine to medium grained, grey			NATURAL
			1.5									
				2.00								
			2.0	14.32	SRT_BH420_2.0 2.00 m				SAND fine to medium grained, black and brown, coffee rock	M	D	
			2.5									
				2.60								
				13.72					SAND fine to medium grained, yellow and grey			
			3.0		SRT_BH420_3.0 3.00 m							
			3.5								MD	
SPT		▽	4.0		SRT_BH420_4.0-4.45 4.00 m							
			4.5							W		
ADV			5.0									

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FINAL REPORT OF BOREHOLE: SRT_BH420

SHEET: 2 OF 2

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333563.7 m E 6247771.9 m N MGA94 56
SURFACE RL: 16.32 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 7.50 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: RB DATE: 6-10-18
CHECKED: DATE:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
ADV / SPT			5.0						SAND fine to medium grained, yellow and grey		MD	NATURAL
			5.5		SRT_BH420_5.5-5.95 5.50 m							
				5.80 10.52					Sandy CLAY yellow, grey and brown		F	
			6.0	*6.30*						W		
ADV / SPT				10.02					CLAY grey, red and orange mottled, trace organics		St	
			6.5									
			7.0		SRT_BH420_7.0-7.45 7.00 m							
			7.5	8.82					END OF BOREHOLE @ 7.50 m TARGET DEPTH REACHED Groundwater Well Installed			
			8.0									
			8.5									
			9.0									
			9.5									
			10.0									

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GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH420

SHEET: 1 OF 2

CLIENT:	TfNSW	COORDS: 333563.7 m E 6247771.9 m N MGA94 56		DRILL RIG: Geoprobe 7822 DT	
PROJECT:	Sydney Metro	SURFACE RL: 16.32 m DATUM: AHD		CONTRACTOR: Matrix	
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°		LOGGED: RB	DATE: 6-10-18
JOB NO:	1791865	HOLE DEPTH: 7.50 m		CHECKED:	DATE:

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	
CC		0.0	16.32		CONCRETE	
			0.35			
			15.97		SILTY GRAVELLY SAND	
		0.5				Grout
		1.0				uPVC Class 18 50mm casing
			1.20, RL15.12			
			1.35			
			14.97		SAND	
		1.5				Bentonite
			2.00			
ADV		2.0	14.32		SAND	
			2.30, RL14.02			
		2.5				
			2.60			
			13.72		SAND	
		3.0				
		3.5				Pre pack screen 50mm
		4.0				8/16" graded gravel
SPT		4.5				
ADV		5.0				

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GAP gINT FN. F17
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GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH420

SHEET: 2 OF 2

CLIENT:	TfNSW	COORDS: 333563.7 m E 6247771.9 m N MGA94 56	DRILL RIG: Geoprobe 7822 DT
PROJECT:	Sydney Metro	SURFACE RL: 16.32 m DATUM: AHD	CONTRACTOR: Matrix
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°	LOGGED: RB DATE: 6-10-18
JOB NO:	1791865	HOLE DEPTH: 7.50 m	CHECKED: DATE:

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	
ADV		5.0			SAND	
		5.5				
SPT			5.80 10.52		SANDY CLAY	5.80, RL10.52 End cap
		6.0				6.00, RL10.32
			6.30 10.02		CLAY	
ADV		6.5				1/4" coated bentonite pellets
		7.0				
SPT			7.50 8.82		END OF BOREHOLE @ 7.50 m TARGET DEPTH REACHED Groundwater Well Installed	7.50, RL8.82
		7.5				
		8.0				
		8.5				
		9.0				
		9.5				
		10.0				

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GAP gINT FN. F17
RL1

GAP 8_16.4 LIB.GLB Log GAP WELL 3 SYDNEY METRO.GPJ <<DrawingFile>> 12-11-2018 13:16 8.30.004 Datgel Tools

FINAL REPORT OF BOREHOLE: SRT_BH421

SHEET: 1 OF 1

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333532.7 m E 6247784.3 m N MGA94 56
SURFACE RL: 16.11 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 3.20 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: TA + RB DATE: 6-10-18
CHECKED: DATE:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	16.11					CONCRETE			
				0.23								
HA	H	GWNE	0.5	15.88	BH421_0.25 0.25 m R = 0A PID = 0.3 ppm				FILL: Sandy GRAVEL fine to coarse grained, sub-angular to angular, dark brown, fine to coarse grained sand	W D - M	D	Road base gravels
				0.60	BH421_0.5 0.50 m QCA102/QCB102 R = 0A PID = 0.2 ppm							
				15.51					SAND fine to medium grained, uniform, orange brown			NATURAL
			1.0	1.00								
				15.11	BH421_1.0 1.00 m R = 0A PID = 0.2 ppm				SAND fine grained, uniform, grey black, with silt			
			1.5		BH421_1.5 1.50 m R = 0A PID = 0.4 ppm							
PT	L		2.0		BH421_2.0 2.00 m R = 0A PID = 0.6 ppm					M	MD - L	
				2.20								
				13.91					SAND fine to medium grained, uniform, pale grey/white			
				2.40								
			2.5	13.71					: as above brown			
				2.60								
				13.51					: as above pale brown/grey			
			3.0		BH421_3.0 3.00 m R = 0A PID = 0.7 ppm							
				12.91					END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED Soil Vapour Probe Installed			
			3.5									
			4.0									
			4.5									
			5.0									

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GAP gINT FN. F01a
RL3

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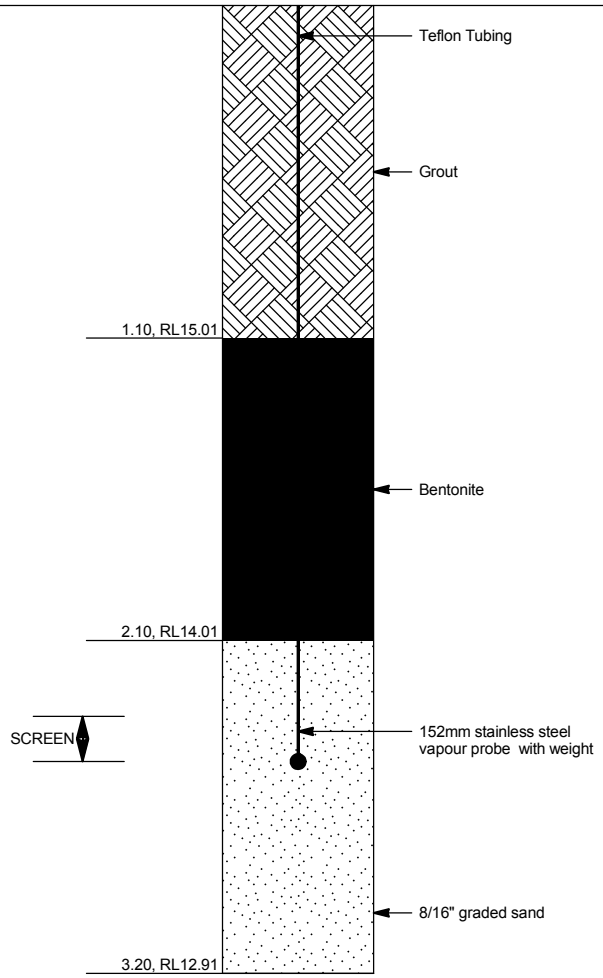
GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH421

SHEET: 1 OF 1

CLIENT:	TfNSW	COORDS: 333532.7 m E 6247784.3 m N MGA94 56		DRILL RIG: Geoprobe 7822 DT	
PROJECT:	Sydney Metro	SURFACE RL: 16.11 m DATUM: AHD		CONTRACTOR: Matrix	
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°		LOGGED: TA + RB	DATE: 6-10-18
JOB NO:	1791865	HOLE DEPTH: 3.20 m		CHECKED:	DATE:

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	ID BH421 Type Tip Depth & RL 2.50 m 13.61 m AHD Installation Date 06-10-18
CC		0.0	16.11		CONCRETE	
			0.23			
			15.88		SANDY GRAVEL	
		0.5	0.60			
HA			15.51		SAND	
			1.00			
		1.0	15.11		SAND	
		1.5				
	GWNE					
		2.0				
			2.20			
PT			13.91		SAND	
			2.40			
		2.5	13.71			
			2.60			
			13.51			
		3.0				
			3.20			
			12.91		END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED Soil Vapour Probe Installed	
		3.5				
		4.0				
		4.5				
		5.0				



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GAP gINT FN. F17
RL1

GAP 8_16.4 LIB.GLB Log GAP WELL 3 SYDNEY METRO.GPJ <<DrawingFile>> 12-11-2018 13:16 8.30.004 Datgel Tools

FINAL REPORT OF BOREHOLE: SRT_BH422

SHEET: 1 OF 1

CLIENT: TfNSW
PROJECT: Sydney Metro
LOCATION: Botany Road, Waterloo, NSW
JOB NO: 1791865

COORDS: 333556.8 m E 6247788.8 m N MGA94 56
SURFACE RL: 16.42 m DATUM: AHD
INCLINATION: -90°
HOLE DEPTH: 3.20 m

DRILL RIG: Geoprobe 7822 DT
CONTRACTOR: Matrix
LOGGED: TA + PK DATE: 7-10-18
CHECKED: DATE:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
CC			0.0	16.42					CONCRETE			
				0.31								
ADT	H			16.11					FILL: GRAVEL medium to coarse grained, angular, grey, trace fine to coarse grained sand	W		road base
			0.5	0.50 15.92	BH422_0.5 0.50 m R = 0A PID = 0.2 ppm				SAND fine to medium grained, dark grey, with silt			NATURAL
HA				0.80 15.62					: as above grey/white, no silt			
			1.0		BH422_1.0 1.00 m QCA103/QCB103 R = 0A PID = 0.2 ppm							
				1.40 15.02					: as above becoming grey with brown			
		GWNE	1.5		BH422_1.5 1.50 m R = 0A PID = 0.5 ppm							
				1.80 14.62					: as above becoming black	D - M		
PT	L		2.0		BH422_2.0 2.00 m R = 0A PID = 0.4 ppm							
				2.10 14.32					: as above becoming grey/white			
			2.5									
			3.0		BH422_3.0 3.00 m R = 0A PID = 0.4 ppm							
				13.22					END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED Soil Vapour Probe Installed			
			3.5									
			4.0									
			4.5									
			5.0									

This report of borehole must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

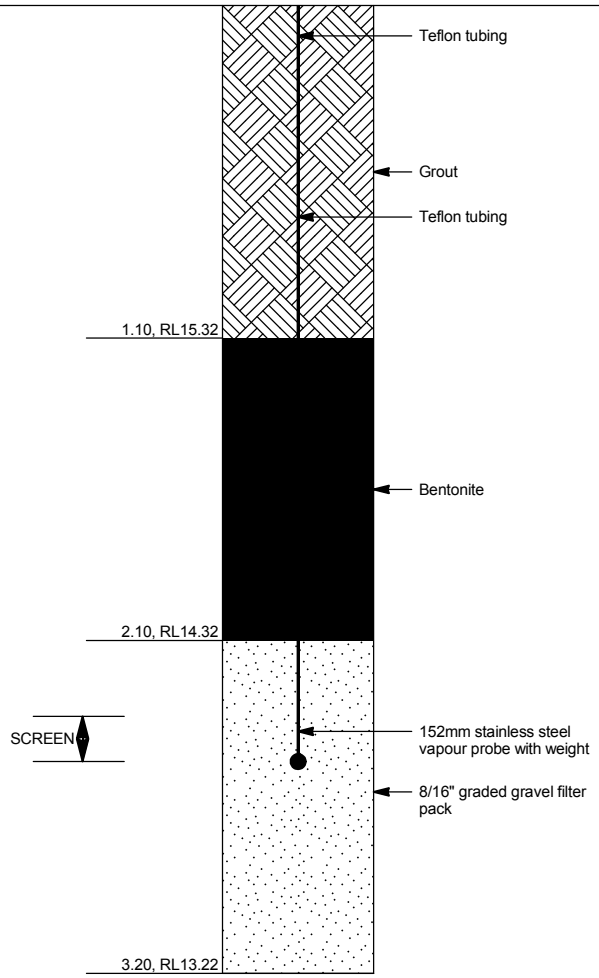
GAP 8_16.4 LIB.GLB Log GAP NON-CORED FULL PAGE SYDNEY METRO.GPJ <<DrawingFile>> 12-11-2018 13:28 8.30.004 Datgel Tools

GOLDER FINAL REPORT OF STANDPIPE INSTALLATION: SRT_BH422

SHEET: 1 OF 1

CLIENT:	TfNSW	COORDS: 333556.8 m E 6247788.8 m N MGA94 56		DRILL RIG: Geoprobe 7822 DT	
PROJECT:	Sydney Metro	SURFACE RL: 16.42 m DATUM: AHD		CONTRACTOR: Matrix	
LOCATION:	Botany Road, Waterloo, NSW	INCLINATION: -90°		LOGGED: TA + PK	DATE: 7-10-18
JOB NO:	1791865	HOLE DEPTH: 3.20 m		CHECKED:	DATE:

Drilling				Field Material Description		Instrumentation Details
METHOD	WATER	DEPTH (metres)	DEPTH RL	GRAPHIC LOG	SOIL/ROCK MATERIAL DESCRIPTION	ID BH422 Type Tip Depth & RL 2.50 m 13.92 m AHD Installation Date
CC		0.0	16.42		CONCRETE	
			0.31			
ADT			16.11		GRAVEL	
		0.5	0.50			
HA			15.92		SAND	
			0.80			
		1.0	15.62			
			1.40			
		1.5	15.02			
	GWNE		1.80			
			14.62			
		2.0	2.10			
PT			14.32			
		2.5				
		3.0	3.20			
			13.22		END OF BOREHOLE @ 3.20 m TARGET DEPTH REACHED Soil Vapour Probe Installed	
		3.5				
		4.0				
		4.5				
		5.0				



This report of standpipe installation must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

GAP gINT FN. F17
RL1

GAP 8_16.4 LIB.GLB Log GAP WELL 3 SYDNEY METRO.GPJ <<DrawingFile>> 12-11-2018 13:28 8.30.004 Datgel Tools

ATTACHMENT B

Photographs

DRUM: SRT-BH409



Photograph No.: 1 **Description:** Re-worked natural material at SRT-BH409 at 0.5 mbgl.



Photograph No.: 2 **Description:** Push tube splits from 1.5 to 4.2 mbgl SRT-BH409.

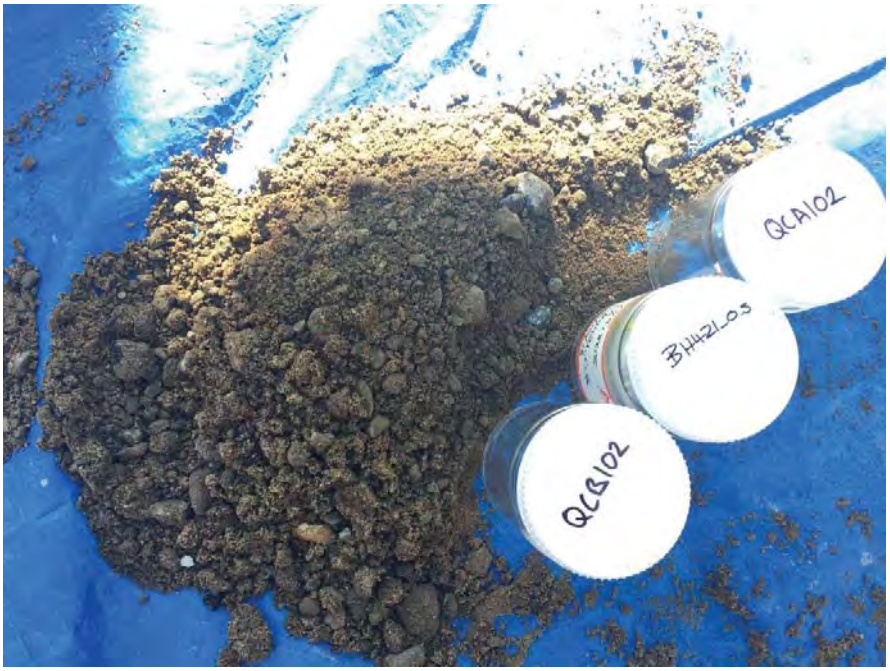
DRUM: SRT-Soil Vapour



Photograph No.: 3 **Description:** Fill material at SRT-BH416 at from 0.25 to 0.5 mbgl.



Photograph No.: 4 **Description:** Push tube splits from 1.5 to 3.2 mbgl at SRT-BH416.



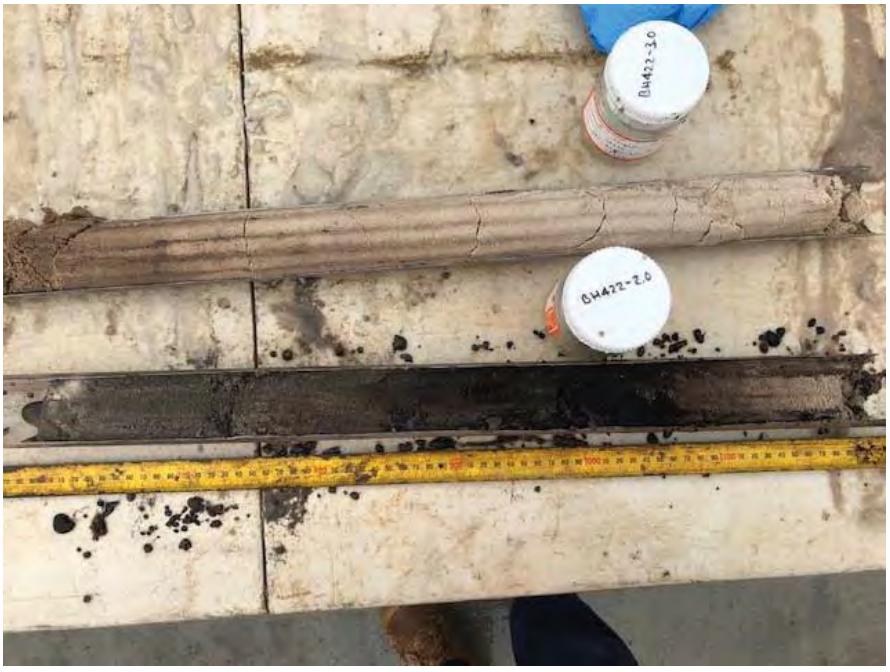
Photograph No.: 5 **Description:** Fill material at SRT-BH421 at 0.5 mbgl.



Photograph No.: 6 **Description:** Push tube splits from 1.5 to 3.2 mbgl SRT-BH421.



Photograph No.: 7 **Description:** Natural material at SRT-BH422 at 1.5 mbgl.



Photograph No.: 8 **Description:** Push tube splits from 1.5 to 3.2 mbgl SRT-BH422.

ATTACHMENT C

Tables

				Drum	DRUM: SRT-BH409														
				Field_ID	SRT_BH409_0.5	QCA101	QCB101	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0	SRT_BH409_4.0								
				Sample_Depth	0.5	0.5	0.5	1.5	2	3	4								
				Sampled_Date	06-10-18	06-10-18	10-06-18	06-10-18	06-10-18	06-10-18	06-10-18								
				Lab_Report	ES1829955	ES1829955	202499	ES1829955	ES1829955	ES1829955	ES1829955								
ChemName	output unit	EQL	CT1 General Soild Waste (NSW)	CT2 / TCLP2 Restricted Solid Waste (NSW)								Statistical Summary							
												Number of Results	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect	Number of Guideline Exceedances	
Asbestos																			
APPROVED IDENTIFIER:	--				1[#1]	1[#1]	-	-	-	-	-	2	2	1	1	1	1	0	
Asbestos in soil (>7mm ACM)	%w/w	0.01			<0.01	<0.01	-	-	-	-	-	2	0	<0.01	ND	<0.01	ND	0	
Asbestos Type	No				-	-	-	-	-	-	-	0	0	0	ND	0	ND	0	
Asbestos (1-Detect or <1-Non-Detect)	No	0.1			0[#2]	0[#2]	0	-	-	-	-	3	0	<0	ND	0	ND	0	
Asbestos Containing Material	mg/kg	0.1			<0.1	<0.1	-	-	-	-	-	2	0	<0.1	ND	<0.1	ND	0	
Asbestos Fines	mg/kg	5			0[#2]	0[#2]	-	-	-	-	-	2	0	<0	ND	0	ND	0	
Asbestos from FA & AF in Soil	%w/w	0.001			<0.001	<0.001	-	-	-	-	-	2	0	<0.001	ND	<0.001	ND	0	
Fibrous Asbestos	mg/kg	0.0004			<0.0004	<0.0004	-	-	-	-	-	2	0	<0.0004	ND	<0.0004	ND	0	
Mass of test sample	g	0.1			394	35.7	-	-	-	-	-	2	2	35.7	35.7	394	394	0	
Sample weight (dry)	g	0.01			394	35.7	-	-	-	-	-	2	2	35.7	35.7	394	394	0	
TPH Group - Waste Classification																			
TRH C6 - C9 Fraction	mg/kg	10	**650**	**2600**	<10	<10	<25	<10	-	<10	-	5	0	<10	ND	<25	ND	0	
TRH C10 - C14 Fraction	mg/kg	50			<50	<50	<50	<50	-	<50	-	5	0	<50	ND	<50	ND	0	
TRH C15 - C28 Fraction	mg/kg	100			<100	<100	<100	<100	-	<100	-	5	0	<100	ND	<100	ND	0	
TRH C29 - C36 Fraction	mg/kg	100			<100	<100	<100	<100	-	<100	-	5	0	<100	ND	<100	ND	0	
TRH+C10 - C36 (Sum of total) (Lab Reported)	mg/kg	50	**10000**	**40000**	<50	<50	-	<50	-	<50	-	4	0	<50	ND	<50	ND	0	
BTEX																			
Benzene	mg/kg	0.2	**10**	**40**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	6	0	<0.2	ND	<0.2	ND	0	
Toluene	mg/kg	0.5	**288**	**1152**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	6	0	<0.5	ND	<0.5	ND	0	
Ethylbenzene	mg/kg	0.5	**600**	**2400**	<0.5	<0.5	<1	<0.5	<0.5	<0.5	-	6	0	<0.5	ND	<1	ND	0	
Xylenes (m & p)	mg/kg	0.5			<0.5	<0.5	<2	<0.5	<0.5	<0.5	-	6	0	<0.5	ND	<2	ND	0	
Xylene (o)	mg/kg	0.5			<0.5	<0.5	<1	<0.5	<0.5	<0.5	-	6	0	<0.5	ND	<1	ND	0	
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5	**1,000**	**4,000**	<0.5	<0.5	<1	<0.5	-	<0.5	-	5	0	<0.5	ND	<1	ND	0	
Total BTEX	mg/kg	0.2			<0.2	<0.2	-	<0.2	-	<0.2	-	4	0	<0.2	ND	<0.2	ND	0	
Heavy Metals																			
Arsenic	mg/kg	5	**100**	**400**	<5	<5	<4	<5	-	<5	-	5	0	<4	ND	<5	ND	0	
Cadmium	mg/kg	1	**20**	**80**	<1	<1	<0.4	<1	-	<1	-	5	0	<0.4	ND	<1	ND	0	
Chromium	mg/kg	2	**100**	**400**	<2	<2	<1	<2	-	<2	-	5	0	<1	ND	<2	ND	0	
Copper	mg/kg	5			<5	<5	4	<5	-	<5	-	5	1	4	4	<5	4	0	
Lead	mg/kg	5	**100**	**400**	<5	<5	8	<5	-	<5	-	5	1	<5	8	8	8	0	
Mercury	mg/kg	0.1	**4**	**16**	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	5	0	<0.1	ND	<0.1	ND	0	
Nickel	mg/kg	2	**40**	**160**	<2	<2	<1	<2	-	<2	-	5	0	<1	ND	<2	ND	0	
Zinc	mg/kg	5			<5	5	16	6	-	<5	-	5	3	<5	5	16	16	0	
PAH																			
Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2			-	-	<0.2	-	-	-	-	1	0	<0.2	ND	<0.2	ND	0	
Acenaphthene	mg/kg	0.5			<0.5	<0.5	<0.1	<0.5	-	<0.5	-	5	0	<0.1	ND	<0.5	ND	0	
Acenaphthylene	mg/kg	0.5			<0.5	<0.5	<0.1	<0.5	-	<0.5	-	5	0	<0.1	ND	<0.5	ND	0	
Anthracene	mg/kg	0.5			<0.5	<0.5	<0.1	<0.5	-	<0.5	-	5	0	<0.1	ND	<0.5	ND	0	
Benz(a)anthracene	mg/kg	0.5			<0.5	<0.5	<0.1	<0.5	-	<0.5	-	5	0	<0.1	ND	<0.5	ND	0	
Benzo(a)pyrene	mg/kg	0.5	**0.8**	**3.2**	<0.5	<0.5	<0.05	<0.5	-	<0.5	-	5	0	<0.05	ND	<0.5	ND	0	
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5			<0.5	<0.5	<0.5	<0.5	-	<0.5	-	5	0	<0.5	ND	<0.5	ND	0	
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5			0.6	0.6	<0.5	0.6	-	0.6	-	5	4	<0.5	0.6	0.6	0.6	0	
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5			1.2	1.2	<0.5	1.2	-	1.2	-	5	4	<0.5	1.2	1.2	1.2	0	
Benzo(b)&(j)fluoranthene	mg/kg	0.5			<0.5	<0.5	-	<0.5	-	<0.5	-	4	0	<0.5	ND	<0.5	ND	0	
Benzo(g,h,i)perylene	mg/kg	0.5			<0.5	<0.5	<0.1	<0.5	-	<0.5	-	5	0	<0.1	ND	<0.5	ND	0	
Benzo(k)fluoranthene	mg/kg	0.5			<0.5	<0.5	-	<0.5	-	<0.5	-	4	0	<0.5	ND	<0.5	ND	0	
Chrysene	mg/kg	0.5			<0.5	<0.5	<0.1	<0.5	-	<0.5	-	5	0	<0.1	ND	<0.5	ND	0	
Dibenz(a,h)anthracene	mg/kg	0.5			<0.5	<0.5	<0.1	<0.5	-	<0.5	-	5	0	<0.1	ND	<0.5	ND	0	
Fluoranthene	mg/kg	0.5			<0.5	<0.5	<0.1	<0.5	-	<0.5	-	5	0	<0.1	ND	<0.5	ND	0	
Fluorene	mg/kg	0.5			<0.5	<0.5	<0.1	<0.5	-	<0.5	-	5	0	<0.1	ND	<0.5	ND	0	
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5			<0.5	<0.5	<0.1	<0.5	-	<0.5	-	5	0	<0.1	ND	<0.5	ND	0	
Naphthalene	mg/kg	0.5			<0.5	<0.5	<0.1	<0.5	<1	<0.5	-	6	0	<0.1	ND	<1	ND	0	
Phenanthrene	mg/kg	0.5			<0.5	<0.5	<0.1	<0.5	-	<0.5	-	5	0	<0.1	ND	<0.5	ND	0	
Pyrene	mg/kg	0.5			<0.5	<0.5	<0.1	<0.5	-	<0.5	-	5	0	<0.1	ND	<0.5	ND	0	
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5	**200**	**800**	<0.5	<0.5	-	<0.5	-	<0.5	-	4	0	<0.5	ND	<0.5	ND	0	
Total PAH (NEPM/WHO 16)	mg/kg	0.05			-	-	<0.05	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0	
Organochlorine Pesticides																			
a-BHC	mg/kg	0.05	**<50***	**<50***	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0	
Aldrin	mg/kg	0.05	**<50***	**<50***	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0	
Dieldrin	mg/kg	0.05	**<50***	**<50***	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0	
Aldrin & Dieldrin (Sum of total) (Lab Reported)	mg/kg	0.05	**<50***	**<50***	<0.05	<0.05	-	-	-	-	-	2	0	<0.05	ND	<0.05	ND	0	

					DRUM: SRT-BH409							Statistical Summary						
				Drum														
				Field_ID	SRT_BH409_0.5	QCA101	QCB101	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0	SRT_BH409_4.0							
				Sample_Depth	0.5	0.5	0.5	1.5	2	3	4							
				Sampled_Date	06-10-18	06-10-18	10-06-18	06-10-18	06-10-18	06-10-18	06-10-18							
				Lab_Report	ES1829955	ES1829955	202499	ES1829955	ES1829955	ES1829955	ES1829955							
ChemName	**output unit**	**EQL**	CT1 General Soild Waste (NSW)	CT2 / TCLP2 Restricted Solid Waste (NSW)								Number of Results	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect	Number of Guideline Exceedances
b-BHC	mg/kg	0.05	**<50***	**<50***	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
cis-Chlordane	mg/kg	0.05	**<50***	**<50***	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
trans-Chlordane	mg/kg	0.05	**<50***	**<50***	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
Chlordane (Sum of total)	mg/kg	0.05	**<50***	**<50***	<0.05	<0.05	-	-	-	-	-	2	0	<0.05	ND	<0.05	ND	0
d-BHC	mg/kg	0.05	**<50***	**<50***	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
DDD	mg/kg	0.05	**<50***	**<50***	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
DDE	mg/kg	0.05	**<50***	**<50***	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
DDT	mg/kg	0.2	**<50***	**<50***	<0.2	<0.2	<0.1	-	-	-	-	3	0	<0.1	ND	<0.2	ND	0
DDT+DDE+DDD (Sum of total) (Lab Reported)	mg/kg	0.05	**<50***	**<50***	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
Endosulfan	mg/kg	0.05	**60**	**240**	<0.05	<0.05	-	-	-	-	-	2	0	<0.05	ND	<0.05	ND	0
Endosulfan I	mg/kg	0.05			<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
Endosulfan II	mg/kg	0.05			<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
Endosulfan sulphate	mg/kg	0.05			<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
Endrin	mg/kg	0.05	**<50***	**<50***	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
Endrin aldehyde	mg/kg	0.05	**<50***	**<50***	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
Endrin ketone	mg/kg	0.05			<0.05	<0.05	-	-	-	-	-	2	0	<0.05	ND	<0.05	ND	0
g-BHC	mg/kg	0.05	**<50***	**<50***	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
Heptachlor	mg/kg	0.05	**<50***	**<50***	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
Heptachlor epoxide	mg/kg	0.05	**<50***	**<50***	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
Hexachlorobenzene	mg/kg	0.05	**<50***	**<50***	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
Methoxychlor	mg/kg	0.2			<0.2	<0.2	<0.1	-	-	-	-	3	0	<0.1	ND	<0.2	ND	0
Organophosphorous Pesticides																		
Azinphos-methyl	mg/kg	0.05			<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
Bromophos-ethyl	mg/kg	0.05			<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
Carbophenothion	mg/kg	0.05			<0.05	<0.05	-	-	-	-	-	2	0	<0.05	ND	<0.05	ND	0
Chlorfenvinphos	mg/kg	0.05			<0.05	<0.05	-	-	-	-	-	2	0	<0.05	ND	<0.05	ND	0
Chlorpyriphos	mg/kg	0.05	**4**	**16**	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
Chlorpyriphos-methyl	mg/kg	0.05			<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
Demeton-s-methyl	mg/kg	0.05			<0.05	<0.05	-	-	-	-	-	2	0	<0.05	ND	<0.05	ND	0
Diazinon	mg/kg	0.05			<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
Dichlorvos	mg/kg	0.05	**250^**	**1000^**	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
Dimethoate	mg/kg	0.05	**250^**	**1000^**	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
Ethion	mg/kg	0.05	**250^**	**1000^**	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
Fenamiphos	mg/kg	0.05			<0.05	<0.05	-	-	-	-	-	2	0	<0.05	ND	<0.05	ND	0
Fenitrothion	mg/kg	0.1	**250^**	**1000^**	-	-	<0.1	-	-	-	-	1	0	<0.1	ND	<0.1	ND	0
Fenthion	mg/kg	0.05	**250^**	**1000^**	<0.05	<0.05	-	-	-	-	-	2	0	<0.05	ND	<0.05	ND	0
Malathion	mg/kg	0.05	**250^**	**1000^**	<0.05	<0.05	<0.1	-	-	-	-	3	0	<0.05	ND	<0.1	ND	0
Parathion-methyl	mg/kg	0.2	**250^**	**1000^**	<0.2	<0.2	-	-	-	-	-	2	0	<0.2	ND	<0.2	ND	0
Monocrotophos	mg/kg	0.2			<0.2	<0.2	-	-	-	-	-	2	0	<0.2	ND	<0.2	ND	0
Parathion	mg/kg	0.2			<0.2	<0.2	<0.1	-	-	-	-	3	0	<0.1	ND	<0.2	ND	0
Pirimphos-ethyl	mg/kg	0.05			<0.05	<0.05	-	-	-	-	-	2	0	<0.05	ND	<0.05	ND	0
Prothiofos	mg/kg	0.05			<0.05	<0.05	-	-	-	-	-	2	0	<0.05	ND	<0.05	ND	0
Ronnel	mg/kg	0.1			-	-	<0.1	-	-	-	-	1	0	<0.1	ND	<0.1	ND	0
Phenols																		
Phenolics (Sum of total)	mg/kg	1			<1	<1	<5	-	-	-	-	3	0	<1	ND	<5	ND	0
Polychlorinated Biphenyls																		
Aroclor 1016	mg/kg	0.1			-	-	<0.1	-	-	-	-	1	0	<0.1	ND	<0.1	ND	0
Aroclor 1232	mg/kg	0.1			-	-	<0.1	-	-	-	-	1	0	<0.1	ND	<0.1	ND	0
Aroclor 1242	mg/kg	0.1			-	-	<0.1	-	-	-	-	1	0	<0.1	ND	<0.1	ND	0
Aroclor 1248	mg/kg	0.1			-	-	<0.1	-	-	-	-	1	0	<0.1	ND	<0.1	ND	0
Aroclor 1254	mg/kg	0.1			-	-	<0.1	-	-	-	-	1	0	<0.1	ND	<0.1	ND	0
Aroclor 1260	mg/kg	0.1			-	-	<0.1	-	-	-	-	1	0	<0.1	ND	<0.1	ND	0
Aroclor 1221	mg/kg	0.1			-	-	<0.1	-	-	-	-	1	0	<0.1	ND	<0.1	ND	0
PCB (Sum of Total-Lab Reported)	mg/kg	0.1	**<50**	**<50**	<0.1	<0.1	<0.1	-	-	-	-	3	0	<0.1	ND	<0.1	ND	0
Volatile Organic Compounds																		
Cyclohexane	mg/kg	1			-	-	<1	-	-	-	-	1	0	<1	ND	<1	ND	0
1,4-Dichlorobenzene	mg/kg	0.5	**150**	**600**	<0.5	<0.5	<1	-	<0.5	-	-	4	0	<0.5	ND	<1	ND	0
4-Chlorotoluene	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	4	0	<0.5	ND	<1	ND	0
1,2,3-Trichlorobenzene	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	4	0	<0.5	ND	<1	ND	0
1,2,4-Trichlorobenzene	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	4	0	<0.5	ND	<1	ND	0
1,2-Dichlorobenzene	mg/kg	0.5	**86**	**344**	<0.5	<0.5	<1	-	<0.5	-	-	4	0	<0.5	ND	<1	ND	0
1,3-Dichlorobenzene	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	4	0	<0.5	ND	<1	ND	0

					Drum	DRUM: SRT-BH409						
					Field_ID	SRT_BH409_0.5	QCA101	QCB101	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0	SRT_BH409_4.0
					Sample_Depth	0.5	0.5	0.5	1.5	2	3	4
					Sampled_Date	06-10-18	06-10-18	10-06-18	06-10-18	06-10-18	06-10-18	06-10-18
					Lab_Report	ES1829955	ES1829955	202499	ES1829955	ES1829955	ES1829955	ES1829955
ChemName	**output unit**	**EQL**	CT1 General Soild Waste (NSW)	CT2 / TCLP2 Restricted Solid Waste (NSW)								
2-Chlorotoluene	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
Bromobenzene	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
Chlorobenzene	mg/kg	0.5	**2000**	**8000**	<0.5	<0.5	<1	-	<0.5	-	-	
1,2,4-trimethylbenzene	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
1,3,5-Trimethylbenzene	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
Isopropylbenzene	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
n-Butylbenzene	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
n-Propylbenzene	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
p-Isopropyltoluene	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
sec-Butylbenzene	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
Styrene	mg/kg	0.5	**60**	**240**	<0.5	<0.5	<1	-	<0.5	-	-	
tert-Butylbenzene	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
Methyl Ethyl Ketone	mg/kg	5			<5	<5	-	-	<5	-	-	
2-Hexanone	mg/kg	5			<5	<5	-	-	<5	-	-	
Methyl iso-butyl ketone	mg/kg	5			<5	<5	-	-	<5	-	-	
Vinyl acetate	mg/kg	5			<5	<5	-	-	<5	-	-	
1,1,1,2-Tetrachloroethane	mg/kg	0.5	**200**	**800**	<0.5	<0.5	<1	-	<0.5	-	-	
1,1,2,2-Tetrachloroethane	mg/kg	0.5	**26**	**104**	<0.5	<0.5	<1	-	<0.5	-	-	
1,1,1-Trichloroethane	mg/kg	0.5	**600**	**2400**	<0.5	<0.5	<1	-	<0.5	-	-	
1,1,2-Trichloroethane	mg/kg	0.5	**24**	**96**	<0.5	<0.5	<1	-	<0.5	-	-	
1,2,3-Trichloropropane	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
1,2-Dibromo-3-chloropropane	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
1,2-Dibromoethane	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
1,1-Dichloroethane	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
1,2-Dichloroethane	mg/kg	0.5	**10**	**40**	<0.5	<0.5	<1	-	<0.5	-	-	
1,1-Dichloroethene	mg/kg	0.5	**14**	**56**	<0.5	<0.5	<1	-	<0.5	-	-	
cis-1,2-Dichloroethene	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
trans-1,2-dichloroethene	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
1,2-Dichloropropane	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
1,3-Dichloropropane	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
2,2-Dichloropropane	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
1,1-Dichloropropene	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
cis-1,3-Dichloropropene	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
trans-1,3-dichloropropene	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
cis-1,4-Dichloro-2-butene	mg/kg	0.5			<0.5	<0.5	-	-	<0.5	-	-	
trans-1,4-Dichloro-2-butene	mg/kg	0.5			<0.5	<0.5	-	-	<0.5	-	-	
Bromochloromethane	mg/kg	1			-	-	<1	-	-	-	-	
Bromodichloromethane	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
Bromoform	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
Bromomethane	mg/kg	5			<5	<5	<1	-	<5	-	-	
Carbon disulfide	mg/kg	0.5			<0.5	<0.5	-	-	<0.5	-	-	
Carbon tetrachloride	mg/kg	0.5	**10**	**40**	<0.5	<0.5	<1	-	<0.5	-	-	
Chlorodibromomethane	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
Chloroethane	mg/kg	5			<5	<5	<1	-	<5	-	-	
Chloroform	mg/kg	0.5	**120**	**480**	<0.5	<0.5	<1	-	<0.5	-	-	
Chloromethane	mg/kg	5			<5	<5	<1	-	<5	-	-	
Dibromomethane	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
Dichlorodifluoromethane	mg/kg	5			<5	<5	<1	-	<5	-	-	
Hexachlorobutadiene	mg/kg	0.5			<0.5	<0.5	<1	-	<0.5	-	-	
Iodomethane	mg/kg	0.5			<0.5	<0.5	-	-	<0.5	-	-	
Pentachloroethane	mg/kg	0.5			<0.5	<0.5	-	-	<0.5	-	-	
Trichloroethene	mg/kg	0.5	**10**	**40**	<0.5	<0.5	<1	-	<0.5	-	-	
Tetrachloroethene	mg/kg	0.5	**14**	**56**	<0.5	<0.5	<1	-	<0.5	-	-	
Trichlorofluoromethane	mg/kg	5			<5	<5	<1	-	<5	-	-	
Vinyl chloride	mg/kg	5	**4**	**16**	<5	<5	<1	-	<5	-	-	
Acid Sulfate Soils Analysis												
pH OX	pH Unit	0.1			-	-	-	-	-	4.6	5.1	
Titratable Sulfidic Acidity	moles H+/t	2			-	-	-	-	-	64	62	
Net Acidity excluding ANC (sulfur units)	moles H+/t	0.02			-	-	-	-	-	<0.02	<0.02	
ANC Fineness Factor	-	0.5			-	-	-	-	-	1.5	1.5	
Sulfidic - Acid Reacted Calcium	%	0.02			-	-	-	-	-	<0.02	<0.02	
Sulfidic - Acid Reacted Magnesium	%S	0.02			-	-	-	-	-	<0.02	<0.02	

Statistical Summary							
Number of Results	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect	Number of Guideline Exceedances
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
3	0	<5	ND	<5	ND	0
3	0	<5	ND	<5	ND	0
3	0	<5	ND	<5	ND	0
3	0	<5	ND	<5	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
3	0	<0.5	ND	<0.5	ND	0
3	0	<0.5	ND	<0.5	ND	0
1	0	<1	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<1	ND	<5	ND	0
3	0	<0.5	ND	<0.5	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<1	ND	<5	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<1	ND	<5	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<1	ND	<5	ND	0
4	0	<0.5	ND	<1	ND	0
3	0	<0.5	ND	<0.5	ND	0
4	0	<0.5	ND	<1	ND	0
4	0	<1	ND	<5	ND	0
4	0	<1	ND	<5	ND	3
2	2	4.6	4.6	5.1	5.1	0
2	2	62	62	64	64	0
2	0	<0.02	ND	<0.02	ND	0
2	2	1.5	1.5	1.5	1.5	0
2	0	<0.02	ND	<0.02	ND	0
2	0	<0.02	ND	<0.02	ND	0

				Drum	DRUM: SRT-BH409														
				Field_ID	SRT_BH409_0.5	QCA101	QCB101	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0	SRT_BH409_4.0								
				Sample_Depth	0.5	0.5	0.5	1.5	2	3	4								
				Sampled_Date	06-10-18	06-10-18	10-06-18	06-10-18	06-10-18	06-10-18	06-10-18								
				Lab_Report	ES1829955	ES1829955	202499	ES1829955	ES1829955	ES1829955	ES1829955								
ChemName	**output unit**	**EQL**	CT1 General Soild Waste (NSW)	CT2 / TCLP2 Restricted Solid Waste (NSW)								**Statistical Summary** Number of Results	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect	Number of Guideline Exceedances
pH KCl	pH Unit	0.1			-	-	-	-	-	5.1	5.8	2	2	5.1	5.1	5.8	5.8	0
Titratable Actual Acidity	moles H+/t	2			-	-	-	-	-	11	5	2	2	5	5	11	11	0
KCl Extractable Sulfur	% S	0.02			-	-	-	-	-	<0.02	<0.02	2	0	<0.02	ND	<0.02	ND	0
Titratable Peroxide Acidity	moles H+/t	2			-	-	-	-	-	76	66	2	2	66	66	76	76	0
Acidity - Peroxide Oxidisable Sulfur	moles H+/t	10			-	-	-	-	-	<10	<10	2	0	<10	ND	<10	ND	0
Acid Reacted Calcium	%	0.02			-	-	-	-	-	<0.02	<0.02	2	0	<0.02	ND	<0.02	ND	0
Acidity - Acid Reacted Calcium	mole H+/t	10			-	-	-	-	-	<10	<10	2	0	<10	ND	<10	ND	0
Magnesium in Peroxide	%	0.02			-	-	-	-	-	<0.02	<0.02	2	0	<0.02	ND	<0.02	ND	0
Acid Reacted Magnesium	%	0.02			-	-	-	-	-	<0.02	<0.02	2	0	<0.02	ND	<0.02	ND	0
Acidity - Acid Reacted Magnesium	mole H+/t	10			-	-	-	-	-	<10	<10	2	0	<10	ND	<10	ND	0
Net Acidity (sulfur units)	%S	0.02			-	-	-	-	-	<0.02	<0.02	2	0	<0.02	ND	<0.02	ND	0
Net Acidity (acidity units)	moles H+/t	10			-	-	-	-	-	11	<10	2	1	<10	11	11	11	0
Liming Rate	kg CaCO3/t	1			-	-	-	-	-	<1	<1	2	0	<1	ND	<1	ND	0
a-Net Acidity without ANCE (acidity units)	moles H+/t	10			-	-	-	-	-	11	<10	2	1	<10	11	11	11	0
Liming rate without ANCE kg CaCO3/t	kg CaCo3/t	1			-	-	-	-	-	<1	<1	2	0	<1	ND	<1	ND	0

Data Comments

#1 C.OWLER

#2 No

* Total concentration of scheduled chemicals to be <50mg/kg for CT1 and CT2

^ Total concentration of moderately harmful pesticides to be <250 mg/kg for CT1 and <1000 for CT2.

						Drum	DRUM: SRT-BH420						Statistical Summary						
						Field_ID	SRT-BH420-0.5	SRT-BH420-1.0	SRT-BH420-2.0	SRT-BH420-3.0	SRT-BH420-4.0-4.45	SRT-BH420-5.5-5.95							
						Sample_Depth	0.5	1	2	3	4	5.5							
						Sampled_Date	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18							
						Lab_Report	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955							
ChemName	**output unit**	**EQL**	CT1 General Soild Waste (NSW)	SCC1 / TCLP1 General Solid Waste	CT2 / TCLP2 Restricted Solid Waste (NSW)								Number of Results	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect	Number of Guideline Exceedances
Asbestos																			
APPROVED IDENTIFIER:	--					1[#1]	-	-	-	-	-	1	1	1	1	1	1	0	
Asbestos in soil (>7mm ACM)	%w/w	0.01				<0.01	-	-	-	-	-	1	0	<0.01	ND	<0.01	ND	0	
Asbestos Type	No					Ch	-	-	-	-	-	0	1	0	ND	0	ND	0	
Asbestos (1-Detect or <1-Non-Detect)	No	0.1				1	-	-	-	-	-	1	1	1	1	1	1	0	
Asbestos Containing Material	mg/kg	0.1				0.7	-	-	-	-	-	1	1	0.7	0.7	0.7	0.7	0	
Asbestos Fines	mg/kg	5				0[#2]	-	-	-	-	-	1	0	0	ND	0	ND	0	
Asbestos from FA & AF in Soil	%w/w	0.001				<0.001	-	-	-	-	-	1	0	<0.001	ND	<0.001	ND	0	
Fibrous Asbestos	mg/kg	0.0004				<0.0004	-	-	-	-	-	1	0	<0.0004	ND	<0.0004	ND	0	
Mass of test sample	g	0.1				1,090	-	-	-	-	-	1	1	1090	1090	1090	1090	0	
Sample weight (dry)	g	0.01				1,090	-	-	-	-	-	1	1	1090	1090	1090	1090	0	
TPH Group - Waste Classification																			
TRH C6 - C9 Fraction	mg/kg	10	**650**		**2600**	<10	<10	<10	-	-	-	3	0	<10	ND	<10	ND	0	
TRH C10 - C14 Fraction	mg/kg	50				<50	<50	<50	-	-	-	3	0	<50	ND	<50	ND	0	
TRH C15 - C28 Fraction	mg/kg	100				<100	<100	<100	-	-	-	3	0	<100	ND	<100	ND	0	
TRH C29 - C36 Fraction	mg/kg	100				<100	<100	<100	-	-	-	3	0	<100	ND	<100	ND	0	
TRH+C10 - C36 (Sum of total) (Lab Reported)	mg/kg	50	**10000**		**40000**	<50	<50	<50	-	-	-	3	0	<50	ND	<50	ND	0	
BTEX																			
Benzene	mg/kg	0.2	**10**		**40**	<0.2	<0.2	<0.2	-	-	-	3	0	<0.2	ND	<0.2	ND	0	
Toluene	mg/kg	0.5	**288**		**1152**	<0.5	<0.5	<0.5	-	-	-	3	0	<0.5	ND	<0.5	ND	0	
Ethylbenzene	mg/kg	0.5	**600**		**2400**	<0.5	<0.5	<0.5	-	-	-	3	0	<0.5	ND	<0.5	ND	0	
Xylenes (m & p)	mg/kg	0.5				<0.5	<0.5	<0.5	-	-	-	3	0	<0.5	ND	<0.5	ND	0	
Xylene (o)	mg/kg	0.5				<0.5	<0.5	<0.5	-	-	-	3	0	<0.5	ND	<0.5	ND	0	
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5	**1,000**		**4,000**	<0.5	<0.5	<0.5	-	-	-	3	0	<0.5	ND	<0.5	ND	0	
Total BTEX	mg/kg	0.2				<0.2	<0.2	<0.2	-	-	-	3	0	<0.2	ND	<0.2	ND	0	
Heavy Metals																			
Arsenic	mg/kg	5	**100**		**400**	11	9	<5	-	-	-	3	2	<5	9	11	11	0	
Cadmium	mg/kg	1	**20**		**80**	2	<1	<1	-	-	-	3	1	<1	2	2	2	0	
Chromium	mg/kg	2	**100**		**400**	9	12	<2	-	-	-	3	2	<2	9	12	12	0	
Copper	mg/kg	5				76	78	<5	-	-	-	3	2	<5	76	78	78	0	
Lead	mg/kg	5	**100**	**1,500**	**400**	**618**	**628**	15	-	-	-	3	3	15	15	628	628	2	
Lead TCLP	mg/L	0.1		**5**		-	1.1	-	-	-	-	1	1	1.1	1.1	1.1	1.1	0	
Mercury	mg/kg	0.1	**4**	**50**	**16**	0.6	**5.8**	<0.1	-	-	-	3	2	<0.1	0.6	5.8	5.8	1	
Mercury TCLP	mg/L	0.001		**0.2**		-	<0.001	-	-	-	-	1	0	<0.001	ND	<0.001	ND	0	
Nickel	mg/kg	2	**40**		**160**	8	10	<2	-	-	-	3	2	<2	8	10	10	0	
Zinc	mg/kg	5				804	481	17	-	-	-	3	3	17	17	804	804	0	
PAH																			
Acenaphthene	mg/kg	0.5				<0.5	<0.5	<0.5	-	-	-	3	0	<0.5	ND	<0.5	ND	0	
Acenaphthylene	mg/kg	0.5				<0.5	<0.5	<0.5	-	-	-	3	0	<0.5	ND	<0.5	ND	0	
Anthracene	mg/kg	0.5				<0.5	<0.5	<0.5	-	-	-	3	0	<0.5	ND	<0.5	ND	0	
Benz(a)anthracene	mg/kg	0.5				0.6	<0.5	<0.5	-	-	-	3	1	<0.5	0.6	0.6	0.6	0	
Benzo(a)pyrene	mg/kg	0.5	**0.8**		**3.2**	0.8	<0.5	<0.5	-	-	-	3	1	<0.5	0.8	0.8	0.8	0	
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5				0.9	<0.5	<0.5	-	-	-	3	1	<0.5	0.9	0.9	0.9	0	
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5				1.2	0.6	0.6	-	-	-	3	3	0.6	0.6	1.2	1.2	0	
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5				1.6	1.2	1.2	-	-	-	3	3	1.2	1.2	1.6	1.6	0	
Benzo(b)&(j)fluoranthene	mg/kg	0.5				0.8	<0.5	<0.5	-	-	-	3	1	<0.5	0.8	0.8	0.8	0	
Benzo(g,h,i)perylene	mg/kg	0.5				<0.5	<0.5	<0.5	-	-	-	3	0	<0.5	ND	<0.5	ND	0	
Benzo(k)fluoranthene	mg/kg	0.5				<0.5	<0.5	<0.5	-	-	-	3	0	<0.5	ND	<0.5	ND	0	
Chrysene	mg/kg	0.5				0.6	<0.5	<0.5	-	-	-	3	1	<0.5	0.6	0.6	0.6	0	
Dibenz(a,h)anthracene	mg/kg	0.5				<0.5	<0.5	<0.5	-	-	-	3	0	<0.5	ND	<0.5	ND	0	
Fluoranthene	mg/kg	0.5				1.3	0.9	<0.5	-	-	-	3	2	<0.5	0.9	1.3	1.3	0	
Fluorene	mg/kg	0.5				<0.5	<0.5	<0.5	-	-	-	3	0	<0.5	ND	<0.5	ND	0	
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5				<0.5	<0.5	<0.5	-	-	-	3	0	<0.5	ND	<0.5	ND	0	
Naphthalene	mg/kg	0.5				<0.5	<0.5	<0.5	-	-	-	3	0	<0.5	ND	<0.5	ND	0	
Phenanthrene	mg/kg	0.5				0.5	0.8	<0.5	-	-	-	3	2	<0.5	0.5	0.8	0.8	0	
Pyrene	mg/kg	0.5				1.4	0.9	<0.5	-	-	-	3	2	<0.5	0.9	1.4	1.4	0	
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5	**200**		**800**	6	2.6	<0.5	-	-	-	3	2	<0.5	2.6	6	6	0	
Organochlorine Pesticides																			
a-BHC	mg/kg	0.05	**<50***		**<50***	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0	
Aldrin	mg/kg	0.05	**<50***		**<50***	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0	
Dieldrin	mg/kg	0.05	**<50***		**<50***	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0	
Aldrin & Dieldrin (Sum of total) (Lab Reported)	mg/kg	0.05	**<50***		**<50***	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0	

					Drum	DRUM: SRT-BH420						Statistical Summary						
					Field_ID	SRT-BH420-0.5	SRT-BH420-1.0	SRT-BH420-2.0	SRT-BH420-3.0	SRT-BH420-4.0-4.45	SRT-BH420-5.5-5.95							
					Sample_Depth	0.5	1	2	3	4	5.5							
					Sampled_Date	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18							
					Lab_Report	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955							
ChemName	**output unit**	**EQL**	CT1 General Soild Waste (NSW)	SCC1 / TCLP1 General Solid Waste	CT2 / TCLP2 Restricted Solid Waste (NSW)							Number of Results	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect	Number of Guideline Exceedances
b-BHC	mg/kg	0.05	**<50***		**<50***	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
cis-Chlordane	mg/kg	0.05	**<50***		**<50***	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
trans-Chlordane	mg/kg	0.05	**<50***		**<50***	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Chlordane (Sum of total)	mg/kg	0.05	**<50***		**<50***	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
d-BHC	mg/kg	0.05	**<50***		**<50***	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
DDD	mg/kg	0.05	**<50***		**<50***	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
DDE	mg/kg	0.05	**<50***		**<50***	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
DDT	mg/kg	0.2	**<50***		**<50***	<0.2	-	-	-	-	-	1	0	<0.2	ND	<0.2	ND	0
DDT+DDE+DDD (Sum of total) (Lab Reported)	mg/kg	0.05	**<50***		**<50***	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Endosulfan	mg/kg	0.05	**60**		**240**	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Endosulfan I	mg/kg	0.05				<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Endosulfan II	mg/kg	0.05				<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Endosulfan sulphate	mg/kg	0.05				<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Endrin	mg/kg	0.05	**<50***		**<50***	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Endrin aldehyde	mg/kg	0.05	**<50***		**<50***	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Endrin ketone	mg/kg	0.05				<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
g-BHC	mg/kg	0.05	**<50***		**<50***	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Heptachlor	mg/kg	0.05	**<50***		**<50***	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Heptachlor epoxide	mg/kg	0.05	**<50***		**<50***	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Hexachlorobenzene	mg/kg	0.05	**<50***		**<50***	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Methoxychlor	mg/kg	0.2				<0.2	-	-	-	-	-	1	0	<0.2	ND	<0.2	ND	0
Organophosphorous Pesticides																		
Azinphos-methyl	mg/kg	0.05				<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Bromophos-ethyl	mg/kg	0.05				<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Carbophenothion	mg/kg	0.05				<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Chlorfenvinphos	mg/kg	0.05				<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Chlorpyriphos	mg/kg	0.05	**4**		**16**	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Chlorpyriphos-methyl	mg/kg	0.05				<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Demeton-s-methyl	mg/kg	0.05				<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Diazinon	mg/kg	0.05				<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Dichlorvos	mg/kg	0.05	**250^**		**1000^**	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Dimethoate	mg/kg	0.05	**250^**		**1000^**	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Ethion	mg/kg	0.05	**250^**		**1000^**	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Fenamiphos	mg/kg	0.05				<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Fenthion	mg/kg	0.05	**250^**		**1000^**	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Malathion	mg/kg	0.05	**250^**		**1000^**	<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Parathion-methyl	mg/kg	0.2	**250^**		**1000^**	<0.2	-	-	-	-	-	1	0	<0.2	ND	<0.2	ND	0
Monocrotophos	mg/kg	0.2				<0.2	-	-	-	-	-	1	0	<0.2	ND	<0.2	ND	0
Parathion	mg/kg	0.2				<0.2	-	-	-	-	-	1	0	<0.2	ND	<0.2	ND	0
Pirimphos-ethyl	mg/kg	0.05				<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Prothiofos	mg/kg	0.05				<0.05	-	-	-	-	-	1	0	<0.05	ND	<0.05	ND	0
Phenols																		
Phenolics (Sum of total)	mg/kg	1				<1	-	-	-	-	-	1	0	<1	ND	<1	ND	0
Polychlorinated Biphenyls																		
PCB (Sum of Total-Lab Reported)	mg/kg	0.1	**<50**		**<50**	<0.1	-	-	-	-	-	1	0	<0.1	ND	<0.1	ND	0
Acid Sulfate Soils Analysis																		
pH OX	pH Unit	0.1				-	-	-	6.7	5.1	4.9	3	3	4.9	4.9	6.7	6.7	0
Titratable Sulfidic Acidity	moles H+/t	2				-	-	-	<2	65	55	3	2	<2	55	65	65	0
Net Acidity excluding ANC (sulfur units)	moles H+/t	0.02				-	-	-	<0.02	<0.02	0.04	3	1	<0.02	0.04	0.04	0.04	0
ANC Fineness Factor	-	0.5				-	-	-	1.5	1.5	1.5	3	3	1.5	1.5	1.5	1.5	0
Excess Acid Neutralising Capacity	%S	0.02				-	-	-	0.634	-	-	1	1	0.634	0.634	0.634	0.634	0
Sulfidic - Acid Reacted Calcium	%	0.02				-	-	-	<0.02	<0.02	0.022	3	1	<0.02	0.022	0.022	0.022	0
Sulfidic - Acid Reacted Magnesium	%S	0.02				-	-	-	<0.02	<0.02	<0.02	3	0	<0.02	ND	<0.02	ND	0
pH KCl	pH Unit	0.1				-	-	-	6.8	6	4.8	3	3	4.8	4.8	6.8	6.8	0
Titratable Actual Acidity	moles H+/t	2				-	-	-	<2	<2	25	3	1	<2	25	25	25	0
KCl Extractable Sulfur	% S	0.02				-	-	-	<0.02	<0.02	<0.02	3	0	<0.02	ND	<0.02	ND	0
Titratable Peroxide Acidity	moles H+/t	2				-	-	-	<2	65	80	3	2	<2	65	80	80	0
Acidity - Excess Acid Neutralising Capacity (ANCE m	moles H+/t	10				-	-	-	127	-	-	1	1	127	127	127	127	0
Sulfidic - Excess Acid Neutralising Capacity (ANCE %	%w/w S	0.02				-	-	-	0.203	-	-	1	1	0.203	0.203	0.203	0.203	0
Acidity - Peroxide Oxidisable Sulfur	moles H+/t	10				-	-	-	<10	<10	<10	3	0	<10	ND	<10	ND	0
Acid Reacted Calcium	%	0.02				-	-	-	<0.02	<0.02	0.027	3	1	<0.02	0.027	0.027	0.027	0
Acidity - Acid Reacted Calcium	mole H+/t	10				-	-	-	<10	<10	14	3	1	<10	14	14	14	0

					Drum	DRUM: SRT-BH420													
					Field_ID	SRT-BH420-0.5	SRT-BH420-1.0	SRT-BH420-2.0	SRT-BH420-3.0	SRT-BH420-4.0-4.45	SRT-BH420-5.5-5.95								
					Sample_Depth	0.5	1	2	3	4	5.5								
					Sampled_Date	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18								
					Lab_Report	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955								
ChemName	**output unit**	**EQL**	CT1 General Soild Waste (NSW)	SCC1 / TCLP1 General Solid Waste	CT2 / TCLP2 Restricted Solid Waste (NSW)							**Statistical Summary** Number of Results	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect	Number of Guideline Exceedances	
Magnesium in Peroxide	%	0.02				-	-	-	<0.02	<0.02	<0.02	3	0	<0.02	ND	<0.02	ND	0	
Acid Reacted Magnesium	%	0.02				-	-	-	<0.02	<0.02	<0.02	3	0	<0.02	ND	<0.02	ND	0	
Acidity - Acid Reacted Magnesium	mole H+/t	10				-	-	-	<10	<10	<10	3	0	<10	ND	<10	ND	0	
Net Acidity (sulfur units)	%S	0.02				-	-	-	<0.02	<0.02	0.04	3	1	<0.02	0.04	0.04	0.04	0	
Net Acidity (acidity units)	moles H+/t	10				-	-	-	<10	<10	25	3	1	<10	25	25	25	0	
Liming Rate	kg CaCO3/t	1				-	-	-	<1	<1	2	3	1	<1	2	2	2	0	
a-Net Acidity without ANCE (acidity units)	moles H+/t	10				-	-	-	<10	<10	25	3	1	<10	25	25	25	0	
Liming rate without ANCE kg CaCO3/t	kg CaCo3/t	1				-	-	-	<1	<1	2	3	1	<1	2	2	2	0	

Data Comments

#1 C.OWLER

#2 No*

* Total concentration of scheduled chemicals to be <50mg/kg for CT1 and CT2

^ Total concentration of moderately harmful pesticides to be <250 mg/kg for CT1 and <1000 for CT2.

^^ Criteria included where leachate analysis was undertaken only.

					Drum											
					Location	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH415	SRT-BH415	SRT-BH415	SRT-BH416	SRT-BH416	SRT-BH416
					Field_ID	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0	SRT_BH408_3.0	SRT-BH415-0.5	QCB106	SRT-BH415-4.0	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0
					Sample_Depth	0.2	0.5	1.5	2	3	0.5	0.5	4	0.25	0.5	1
					Sampled_Date	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	20-10-18	20-10-18	20-10-18	06-10-18	06-10-18	06-10-18
					Lab_Report	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1831696	203759	ES1831696	ES1829955	ES1829955	ES1829955
ChemName	**output unit**	**EQL**	CT1 General Soild Waste (NSW)	SCC1 / TCLP1 General Solid Waste	CT2 / TCLP2 Restricted Solid Waste (NSW)											
Asbestos																
APPROVED IDENTIFIER:	--					1[#10]	-	-	-	-	1[#11]	-	-	1[#9]	-	1[#9]
Asbestos in soil (>7mm ACM)	%w/w	0.01				<0.01	-	-	-	-	<0.01	-	-	<0.01	-	<0.01
Asbestos Type	No					-	-	-	-	-	-	-	-	-	-	-
Asbestos (1-Detect or <1-Non-Detect)	No	0.1				0[#12]	-	-	-	-	0[#12]	-	-	0[#12]	-	0[#12]
Asbestos Containing Material	mg/kg	0.1				<0.1	-	-	-	-	<0.1	-	-	<0.1	-	<0.1
Asbestos Fines	mg/kg	5				0[#12]	-	-	-	-	0[#12]	-	-	0[#12]	-	0[#12]
Asbestos from FA & AF in Soil	%w/w	0.001				<0.001	-	-	-	-	<0.001	-	-	<0.001	-	<0.001
Fibrous Asbestos	mg/kg	0.0004				<0.0004	-	-	-	-	<0.0004	-	-	<0.0004	-	<0.0004
Mass of test sample	g	0.1				488	-	-	-	-	520	-	-	532	-	408
Sample weight (dry)	g	0.01				488	-	-	-	-	520	-	-	532	-	408
TPH Group - Waste Classification																
TRH C6 - C9 Fraction	mg/kg	10	**650**		**2600**	<10	<10	-	<10	-	<10	<25	-	<10	<10	-
TRH C10 - C14 Fraction	mg/kg	50				<50	<50	-	<50	-	<50	<50	-	<50	<50	-
TRH C15 - C28 Fraction	mg/kg	100				<100	<100	-	<100	-	<100	<100	-	<100	<100	-
TRH C29 - C36 Fraction	mg/kg	100				<100	<100	-	<100	-	<100	<100	-	<100	<100	-
TRH+C10 - C36 (Sum of total) (Lab Reported)	mg/kg	50	**10000**		**40000**	<50	<50	-	<50	-	<50	-	-	<50	<50	-
BTEX																
Benzene	mg/kg	0.2	**10**		**40**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2
Toluene	mg/kg	0.5	**288**		**1152**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	0.5	**600**		**2400**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5
Xylenes (m & p)	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5	<0.5
Xylene (o)	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	-	<0.5	<0.5	<0.5
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5	**1,000**		**4,000**	<0.5	<0.5	-	<0.5	-	<0.5	<1	-	<0.5	<0.5	-
Total BTEX	mg/kg	0.2				<0.2	<0.2	-	<0.2	-	<0.2	-	-	<0.2	<0.2	-
Heavy Metals																
Arsenic	mg/kg	5	**100**		**400**	<5	<5	-	<5	-	<5	<4	-	6	<5	-
Cadmium	mg/kg	1	**20**		**80**	<1	<1	-	<1	-	<1	<0.4	-	6	<1	-
Chromium	mg/kg	2	**100**		**400**	<2	<2	-	<2	-	7	7	-	20	7	-
Copper	mg/kg	5				6	<5	-	<5	-	<5	5	-	28	40	-
Lead	mg/kg	5	**100**	**1,500**	**400**	55	<5	-	<5	-	16	19	-	**813**	**276**	-
Lead TCLP	mg/L	0.1		**5**		-	-	-	-	-	-	-	-	**6.8**	-	-
Mercury	mg/kg	0.1	**4**	**50**	**16**	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	0.2	1.6	-
Nickel	mg/kg	2	**40**		**160**	<2	<2	-	<2	-	3	4	-	3	5	-
Zinc	mg/kg	5				73	<5	-	<5	-	20	21	-	2,100	227	-
PAH																
Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2				-	-	-	-	-	-	<0.2	-	-	-	-
Acenaphthene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	-	<0.5	<0.5	-
Acenaphthylene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	-	<0.5	<0.5	-
Anthracene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	-	<0.5	<0.5	-
Benz(a)anthracene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	-	0.5	0.8	-
Benzo(a)pyrene	mg/kg	0.5	**0.8**	**10**	**3.2**	<0.5	<0.5	-	<0.5	-	<0.5	0.06	-	0.6	0.8	-
Benzo(a)pyrene TCLP				**0.04**		-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.5	-	0.7	1	-
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5				0.6	0.6	-	0.6	-	0.6	<0.5	-	1	1.3	-
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5				1.2	1.2	-	1.2	-	1.2	<0.5	-	1.3	1.6	-
Benzo(b)&(j)fluoranthene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	-	-	0.7	0.8	-
Benzo(g,h,i)perylene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	-	<0.5	<0.5	-
Benzo(k)fluoranthene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	-	-	<0.5	<0.5	-
Chrysene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	-	0.5	0.7	-
Dibenz(a,h)anthracene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	-	<0.5	<0.5	-
Fluoranthene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	0.1	-	1.1	1.7	-
Fluorene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	-	<0.5	<0.5	-
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	-	<0.5	<0.5	-
Naphthalene	mg/kg	0.5				<0.5	<0.5	<1	<0.5	<1	<0.5	<0.1	-	<0.5	<0.5	<1
Phenanthrene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	<0.1	-	<0.5	1	-
Pyrene	mg/kg	0.5				<0.5	<0.5	-	<0.5	-	<0.5	0.1	-	1.2	1.7	-
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5	**200**		**800**	<0.5	<0.5	-	<0.5	-	<0.5	-	-	4.6	7.5	-
Total PAH (NEPM/WHO 16)	mg/kg	0.05				-	-	-	-	-	-	0.3	-	-	-	-
Organochlorine Pesticides																
a-BHC	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-

					Drum												
					Location	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH415	SRT-BH415	SRT-BH415	SRT-BH416	SRT-BH416	SRT-BH416
					Field_ID	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0	SRT_BH408_3.0	SRT-BH415-0.5	QCB106	SRT-BH415-4.0	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0
					Sample_Depth	0.2	0.5	1.5	2	3	0.5	0.5	4	0.25	0.5	1
					Sampled_Date	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	20-10-18	20-10-18	20-10-18	06-10-18	06-10-18	06-10-18
					Lab_Report	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1831696	203759	ES1831696	ES1829955	ES1829955	ES1829955
ChemName	**output unit**	**EQL**	CT1 General Soild Waste (NSW)	SCC1 / TCLP1 General Solid Waste	CT2 / TCLP2 Restricted Solid Waste (NSW)												
Aldrin	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Dieldrin	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Aldrin & Dieldrin (Sum of total) (Lab Reported)	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-
b-BHC	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
cis-Chlordane	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
trans-Chlordane	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Chlordane (Sum of total)	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-
d-BHC	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
DDD	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
DDE	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
DDT	mg/kg	0.2	**<50***		**<50***	-	<0.2	-	-	-	<0.2	<0.1	-	-	<0.2	-
DDT+DDE+DDD (Sum of total) (Lab Reported)	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Endosulfan	mg/kg	0.05	**60**		**240**	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-
Endosulfan I	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Endosulfan II	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Endosulfan sulphate	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Endrin	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Endrin aldehyde	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Endrin ketone	mg/kg	0.05				-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-
g-BHC	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Heptachlor	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Heptachlor epoxide	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Hexachlorobenzene	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Methoxychlor	mg/kg	0.2				-	<0.2	-	-	-	<0.2	<0.1	-	-	<0.2	-
Organophosphorous Pesticides																	
Azinphos-methyl	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Bromophos-ethyl	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Carbophenothion	mg/kg	0.05				-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-
Chlorfenvinphos	mg/kg	0.05				-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-
Chlorpyriphos	mg/kg	0.05	**4**		**16**	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Chlorpyriphos-methyl	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Demeton-s-methyl	mg/kg	0.05				-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-
Diazinon	mg/kg	0.05				-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Dichlorvos	mg/kg	0.05	**250^**		**1000^**	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Dimethoate	mg/kg	0.05	**250^**		**1000^**	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Ethion	mg/kg	0.05	**250^**		**1000^**	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Fenamiphos	mg/kg	0.05				-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-
Fenitrothion	mg/kg	0.1	**250^**		**1000^**	-	-	-	-	-	-	<0.1	-	-	-	-
Fenthion	mg/kg	0.05	**250^**		**1000^**	-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-
Malathion	mg/kg	0.05	**250^**		**1000^**	-	<0.05	-	-	-	<0.05	<0.1	-	-	<0.05	-
Parathion-methyl	mg/kg	0.2	**250^**		**1000^**	-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-
Monocrotophos	mg/kg	0.2				-	<0.2	-	-	-	<0.2	-	-	-	<0.2	-
Parathion	mg/kg	0.2				-	<0.2	-	-	-	<0.2	<0.1	-	-	<0.2	-
Pirimphos-ethyl	mg/kg	0.05				-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-
Prothiofos	mg/kg	0.05				-	<0.05	-	-	-	<0.05	-	-	-	<0.05	-
Ronnel	mg/kg	0.1				-	-	-	-	-	-	<0.1	-	-	-	-
Phenols																	
Phenolics (Sum of total)	mg/kg	1				-	<1	-	-	-	<1	<5	-	-	<1	-
Polychlorinated Biphenyls																	
Aroclor 1016	mg/kg	0.1				-	-	-	-	-	-	<0.1	-	-	-	-
Aroclor 1232	mg/kg	0.1				-	-	-	-	-	-	<0.1	-	-	-	-
Aroclor 1242	mg/kg	0.1				-	-	-	-	-	-	<0.1	-	-	-	-
Aroclor 1248	mg/kg	0.1				-	-	-	-	-	-	<0.1	-	-	-	-
Aroclor 1254	mg/kg	0.1				-	-	-	-	-	-	<0.1	-	-	-	-
Aroclor 1260	mg/kg	0.1				-	-	-	-	-	-	<0.1	-	-	-	-
Aroclor 1221	mg/kg	0.1				-	-	-	-	-	-	<0.1	-	-	-	-
PCB (Sum of Total-Lab Reported)	mg/kg	0.1	**<50**		**<50**	-	<0.1	-	-	-	<0.1	<0.1	-	-	<0.1	-
Volatile Organic Compounds																	
Cyclohexane	mg/kg	1				-	-	-	-	-	-	<1	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.5	**150**		**600**	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
4-Chlorotoluene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5

					Drum												
					Location	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH415	SRT-BH415	SRT-BH415	SRT-BH416	SRT-BH416	SRT-BH416
					Field_ID	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0	SRT_BH408_3.0	SRT-BH415-0.5	QCB106	SRT-BH415-4.0	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0
					Sample_Depth	0.2	0.5	1.5	2	3	0.5	0.5	4	0.25	0.5	1
					Sampled_Date	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	20-10-18	20-10-18	20-10-18	06-10-18	06-10-18	06-10-18
					Lab_Report	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1831696	203759	ES1831696	ES1829955	ES1829955	ES1829955
ChemName	**output unit**	**EQL**	CT1 General Soild Waste (NSW)	SCC1 / TCLP1 General Solid Waste	CT2 / TCLP2 Restricted Solid Waste (NSW)												
1,2,3-Trichlorobenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
1,2,4-Trichlorobenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
1,2-Dichlorobenzene	mg/kg	0.5	**86**		**344**	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
1,3-Dichlorobenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
2-Chlorotoluene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
Bromobenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
Chlorobenzene	mg/kg	0.5	**2000**		**8000**	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
1,2,4-trimethylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
1,3,5-Trimethylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
Isopropylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
n-Butylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
n-Propylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
p-Isopropyltoluene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
sec-Butylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
Styrene	mg/kg	0.5	**60**		**240**	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
tert-Butylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
Methyl Ethyl Ketone	mg/kg	5				-	<5	<5	-	<5	<5	-	-	<5	-	<5
2-Hexanone	mg/kg	5				-	<5	<5	-	<5	<5	-	-	<5	-	<5
Methyl iso-butyl ketone	mg/kg	5				-	<5	<5	-	<5	<5	-	-	<5	-	<5
Vinyl acetate	mg/kg	5				-	<5	<5	-	<5	<5	-	-	<5	-	<5
1,1,1,2-Tetrachloroethane	mg/kg	0.5	**200**		**800**	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
1,1,2,2-Tetrachloroethane	mg/kg	0.5	**26**		**104**	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
1,1,1-Trichloroethane	mg/kg	0.5	**600**		**2400**	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
1,1,2-Trichloroethane	mg/kg	0.5	**24**		**96**	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
1,2,3-Trichloropropane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
1,2-Dibromo-3-chloropropane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
1,2-Dibromoethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
1,1-Dichloroethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
1,2-Dichloroethane	mg/kg	0.5	**10**		**40**	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
1,1-Dichloroethene	mg/kg	0.5	**14**		**56**	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
cis-1,2-Dichloroethene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
trans-1,2-dichloroethene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
1,2-Dichloropropane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
1,3-Dichloropropane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
2,2-Dichloropropane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
1,1-Dichloropropene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
cis-1,3-Dichloropropene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
trans-1,3-dichloropropene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
cis-1,4-Dichloro-2-butene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	<0.5	-	<0.5
trans-1,4-Dichloro-2-butene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	<0.5	-	<0.5
Bromochloromethane	mg/kg	1				-	-	-	-	-	-	<1	-	-	-	-
Bromodichloromethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
Bromoform	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
Bromomethane	mg/kg	5				-	<5	<5	-	<5	<5	<1	-	<5	-	<5
Carbon disulfide	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	<0.5	-	<0.5
Carbon tetrachloride	mg/kg	0.5	**10**		**40**	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
Chlorodibromomethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
Chloroethane	mg/kg	5				-	<5	<5	-	<5	<5	<1	-	<5	-	<5
Chloroform	mg/kg	0.5	**120**		**480**	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
Chloromethane	mg/kg	5				-	<5	<5	-	<5	<5	<1	-	<5	-	<5
Dibromomethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
Dichlorodifluoromethane	mg/kg	5				-	<5	<5	-	<5	<5	<1	-	<5	-	<5
Hexachlorobutadiene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
Iodomethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	<0.5	-	<0.5
Pentachloroethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	<0.5	-	<0.5
Trichloroethene	mg/kg	0.5	**10**		**40**	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
Tetrachloroethene	mg/kg	0.5	**14**		**56**	-	<0.5	<0.5	-	<0.5	<0.5	<1	-	<0.5	-	<0.5
Trichlorofluoromethane	mg/kg	5				-	<5	<5	-	<5	<5	<1	-	<5	-	<5
Vinyl chloride	mg/kg	5	**4**		**16**	-	<5	<5	-	<5	<5	<1	-	<5	-	<5
Acid Sulfate Soils Analysis																
pH OX	pH Unit	0.1				-	-	-	-	4.6	-	-	5	-	-	-

					Drum											
					Location	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH415	SRT-BH415	SRT-BH415	SRT-BH416	SRT-BH416	SRT-BH416
					Field_ID	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0	SRT_BH408_3.0	SRT-BH415-0.5	QCB106	SRT-BH415-4.0	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0
					Sample_Depth	0.2	0.5	1.5	2	3	0.5	0.5	4	0.25	0.5	1
					Sampled_Date	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	20-10-18	20-10-18	20-10-18	06-10-18	06-10-18	06-10-18
					Lab_Report	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1831696	203759	ES1831696	ES1829955	ES1829955	ES1829955
ChemName	**output unit**	**EQL**	CT1 General Soild Waste (NSW)	SCC1 / TCLP1 General Solid Waste	CT2 / TCLP2 Restricted Solid Waste (NSW)											
Titratable Sulfidic Acidity	moles H+/t	2				-	-	-	-	75	-	-	8	-	-	-
Net Acidity excluding ANC (sulfur units)	moles H+/t	0.02				-	-	-	-	<0.02	-	-	<0.02	-	-	-
ANC Fineness Factor	-	0.5				-	-	-	-	1.5	-	-	1.5	-	-	-
Sulfidic - Acid Reacted Calcium	%	0.02				-	-	-	-	<0.02	-	-	<0.02	-	-	-
Sulfidic - Acid Reacted Magnesium	%S	0.02				-	-	-	-	<0.02	-	-	<0.02	-	-	-
pH KCl	pH Unit	0.1				-	-	-	-	5.8	-	-	6	-	-	-
Titratable Actual Acidity	moles H+/t	2				-	-	-	-	2	-	-	<2	-	-	-
KCl Extractable Sulfur	% S	0.02				-	-	-	-	<0.02	-	-	<0.02	-	-	-
Titratable Peroxide Acidity	moles H+/t	2				-	-	-	-	77	-	-	8	-	-	-
Acidity - Peroxide Oxidisable Sulfur	moles H+/t	10				-	-	-	-	<10	-	-	<10	-	-	-
Acid Reacted Calcium	%	0.02				-	-	-	-	<0.02	-	-	<0.02	-	-	-
Acidity - Acid Reacted Calcium	mole H+/t	10				-	-	-	-	<10	-	-	<10	-	-	-
Magnesium in Peroxide	%	0.02				-	-	-	-	<0.02	-	-	<0.02	-	-	-
Acid Reacted Magnesium	%	0.02				-	-	-	-	<0.02	-	-	<0.02	-	-	-
Acidity - Acid Reacted Magnesium	mole H+/t	10				-	-	-	-	<10	-	-	<10	-	-	-
Net Acidity (sulfur units)	%S	0.02				-	-	-	-	<0.02	-	-	<0.02	-	-	-
Net Acidity (acidity units)	moles H+/t	10				-	-	-	-	<10	-	-	<10	-	-	-
Liming Rate	kg CaCO3/t	1				-	-	-	-	<1	-	-	<1	-	-	-
a-Net Acidity without ANCE (acidity units)	moles H+/t	10				-	-	-	-	<10	-	-	<10	-	-	-
Liming rate without ANCE kg CaCO3/t	kg CaCo3/t	1				-	-	-	-	<1	-	-	<1	-	-	-
Per- and polyfluoroalkyl substances (PFAS)																
Sum of WA DER PFAS (n=10)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-
Sum of PFASs (n=28)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-
10:2 Fluorotelomer sulfonic acid	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-
4:2 Fluorotelomer sulfonic acid	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-
8:2 Fluorotelomer sulfonate	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-
N-Et-FOSA	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-
N-Et-FOSE	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-
N-Me-FOSA	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-
N-Me-FOSE	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid (PFBA)	mg/kg	0.001				-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonic acid	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-pentanoic acid (PFPeA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-
Perfluoropentane sulfonic acid	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-
PFDcS	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanesulfonic acid (PFBS)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002		**1.8**		-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanesulfonic acid (PFHxS)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonic acid (PFOS)	mg/L	0.00001		**0.05**		-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanesulfonic acid (PFHxS)	mg/L	0.00002				-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanoate (PFOA)	mg/kg	0.0002		**18**		-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanoate (PFOA)	mg/L	0.00001		**0.5**		-	-	-	-	-	-	-	-	-	-	-
Perfluorononanoic acid (PFNA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonamide (PFOSA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-

					Drum											
					Location	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH408	SRT-BH415	SRT-BH415	SRT-BH415	SRT-BH416	SRT-BH416	SRT-BH416
					Field_ID	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0	SRT_BH408_3.0	SRT-BH415-0.5	QCB106	SRT-BH415-4.0	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0
					Sample_Depth	0.2	0.5	1.5	2	3	0.5	0.5	4	0.25	0.5	1
					Sampled_Date	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	20-10-18	20-10-18	20-10-18	06-10-18	06-10-18	06-10-18
					Lab_Report	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1831696	203759	ES1831696	ES1829955	ES1829955	ES1829955
ChemName	**output unit**	**EQL**	CT1 General Soild Waste (NSW)	SCC1 / TCLP1 General Solid Waste	CT2 / TCLP2 Restricted Solid Waste (NSW)											

Data Comments

#1 Pale brown sandy soil plus one piece of bonded asbestos cement sheeting approximately 12 x 9 x 2mm.
#2 A collection of crushed building debris.
#3 Pale brown sandy soil with slag debris.
#4 Grey rocky soil with organic matter.
#5 Pale brown sandy soil.
#6 Mid brown sandy soil.
#7 Mid grey sandy soil.
#8 Brown sandy soil.
#9 G.MORGAN
#10 C.OWLER
#11 E.DAOS
#12 No*
#13 Ch
#14 No
* Total concentration of scheduled chemicals to be <50mg/kg for CT1 and CT2
^ Total concentration of moderately harmful pesticides to be <250 mg/kg for CT1 and <1000 for CT2.
^^ Criteria included where leachate analysis was undertaken only.

					Drum	SRT-Soil Vapour											
					Location	SRT-BH416	SRT-BH416	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421
					Field_ID	SRT_BH416_1.5	SRT_BH416_3.0	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT_BH421_0.25	SRT_BH421_0.5	QCA102	QCB102	SRT_BH421_1.0
					Sample_Depth	1.5	3	0.5	1.5	2	3	0.25	0.5	0.5	0.5	1
					Sampled_Date	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	10-06-18	06-10-18
					Lab_Report	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	202499	ES1829955
ChemName	**output unit**	**EQL**	CT1 General Soild Waste (NSW)	SCC1 / TCLP1 General Solid Waste	CT2 / TCLP2 Restricted Solid Waste (NSW)												
Asbestos																	
APPROVED IDENTIFIER:	--					-	-	1[#9]	-	-	-	1[#9]	-	-	-	-	
Asbestos in soil (>7mm ACM)	%w/w	0.01				-	-	<0.01	-	-	-	<0.01	-	-	-	-	
Asbestos Type	No					-	-	-	-	-	-	-	-	-	-	-	
Asbestos (1-Detect or <1-Non-Detect)	No	0.1				-	-	0[#12]	-	-	-	0[#12]	-	-	-	-	
Asbestos Containing Material	mg/kg	0.1				-	-	<0.1	-	-	-	<0.1	-	-	-	-	
Asbestos Fines	mg/kg	5				-	-	0[#12]	-	-	-	0[#12]	-	-	-	-	
Asbestos from FA & AF in Soil	%w/w	0.001				-	-	<0.001	-	-	-	<0.001	-	-	-	-	
Fibrous Asbestos	mg/kg	0.0004				-	-	<0.0004	-	-	-	<0.0004	-	-	-	-	
Mass of test sample	g	0.1				-	-	486	-	-	-	658	-	-	-	-	
Sample weight (dry)	g	0.01				-	-	486	-	-	-	658	-	-	-	-	
TPH Group - Waste Classification																	
TRH C6 - C9 Fraction	mg/kg	10	**650**		**2600**	<10	<10	<10	<10	-	<10	-	<10	<10	<25	<10	
TRH C10 - C14 Fraction	mg/kg	50				<50	<50	<50	<50	-	<50	-	<50	<50	<50	<50	
TRH C15 - C28 Fraction	mg/kg	100				<100	<100	<100	<100	-	<100	-	120	130	170	<100	
TRH C29 - C36 Fraction	mg/kg	100				<100	<100	<100	<100	-	<100	-	200	200	170	<100	
TRH+C10 - C36 (Sum of total) (Lab Reported)	mg/kg	50	**10000**		**40000**	<50	<50	<50	<50	-	<50	-	320	330	-	<50	
BTEX																	
Benzene	mg/kg	0.2	**10**		**40**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	
Toluene	mg/kg	0.5	**288**		**1152**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	
Ethylbenzene	mg/kg	0.5	**600**		**2400**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	
Xylenes (m & p)	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<2	<0.5	
Xylene (o)	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<1	<0.5	
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5	**1,000**		**4,000**	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<1	<0.5	
Total BTEX	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	<0.2	
Heavy Metals																	
Arsenic	mg/kg	5	**100**		**400**	<5	<5	<5	<5	-	<5	-	<5	<5	<4	<5	
Cadmium	mg/kg	1	**20**		**80**	<1	<1	<1	<1	-	<1	-	<1	<1	<0.4	<1	
Chromium	mg/kg	2	**100**		**400**	<2	<2	15	22	-	2	-	12	9	10	3	
Copper	mg/kg	5				<5	<5	32	5	-	<5	-	20	19	28	<5	
Lead	mg/kg	5	**100**	**1,500**	**400**	7	<5	30	9	-	<5	-	22	23	16	<5	
Lead TCLP	mg/L	0.1		**5**		-	-	-	-	-	-	-	-	-	-	-	
Mercury	mg/kg	0.1	**4**	**50**	**16**	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	
Nickel	mg/kg	2	**40**		**160**	<2	<2	23	<2	-	<2	-	10	6	8	<2	
Zinc	mg/kg	5				6	14	265	11	-	8	-	48	53	36	<5	
PAH																	
Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2				-	-	-	-	-	-	-	-	-	1	-	
Acenaphthene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	0.1	<0.5	
Acenaphthylene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	
Anthracene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	0.6	0.3	<0.5	
Benz(a)anthracene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	-	<0.5	-	0.8	1	0.9	<0.5	
Benzo(a)pyrene	mg/kg	0.5	**0.8**	**10**	**3.2**	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	0.8	**1**	**0.85**	<0.5	
Benzo(a)pyrene TCLP				**0.04**		-	-	-	-	-	-	-	-	-	-	-	
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	-	<0.5	-	1	1.2	1.1	<0.5	
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5				0.6	0.6	0.6	0.6	-	0.6	-	1.3	1.5	1.2	0.6	
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5				1.2	1.2	1.2	1.2	-	1.2	-	1.6	1.8	1.2	1.2	
Benzo(b)&(j)fluoranthene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	-	<0.5	-	0.8	1	-	<0.5	
Benzo(g,h,i)perylene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	0.5	<0.5	
Benzo(k)fluoranthene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	-	<0.5	
Chrysene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	-	<0.5	-	0.8	1	0.9	<0.5	
Dibenz(a,h)anthracene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.1	<0.5	
Fluoranthene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	-	<0.5	-	2.2	2.6	2.1	<0.5	
Fluorene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	0.2	<0.5	
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	0.4	<0.5	
Naphthalene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	<0.5	<0.5	<0.1	<0.5	
Phenanthrene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	-	<0.5	-	1.8	2	1.6	<0.5	
Pyrene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	-	<0.5	-	2.3	2.7	2	<0.5	
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5	**200**		**800**	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	9.5	11.9	-	<0.5	
Total PAH (NEPM/WHO 16)	mg/kg	0.05				-	-	-	-	-	-	-	-	-	11	-	
Organochlorine Pesticides																	
a-BHC	mg/kg	0.05	**<50***		**<50***	-	-	<0.05	-	-	-	<0.05	-	-	-	-	

						Drum	SRT-Soil Vapour										
						Location	SRT-BH416	SRT-BH416	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421
						Field_ID	SRT_BH416_1.5	SRT_BH416_3.0	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT_BH421_0.25	SRT_BH421_0.5	QCA102	QCB102	SRT_BH421_1.0
						Sample_Depth	1.5	3	0.5	1.5	2	3	0.25	0.5	0.5	0.5	1
						Sampled_Date	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	10-06-18	06-10-18
						Lab_Report	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	202499	ES1829955
ChemName	**output unit**	**EQL**	CT1 General Soild Waste (NSW)	SCC1 / TCLP1 General Solid Waste	CT2 / TCLP2 Restricted Solid Waste (NSW)												
Aldrin	mg/kg	0.05	**<50***		**<50***	-	-	<0.05	-	-	-	<0.05	-	-	-	-
Dieldrin	mg/kg	0.05	**<50***		**<50***	-	-	<0.05	-	-	-	<0.05	-	-	-	-
Aldrin & Dieldrin (Sum of total) (Lab Reported)	mg/kg	0.05	**<50***		**<50***	-	-	<0.05	-	-	-	<0.05	-	-	-	-
b-BHC	mg/kg	0.05	**<50***		**<50***	-	-	<0.05	-	-	-	<0.05	-	-	-	-
cis-Chlordane	mg/kg	0.05	**<50***		**<50***	-	-	<0.05	-	-	-	<0.05	-	-	-	-
trans-Chlordane	mg/kg	0.05	**<50***		**<50***	-	-	<0.05	-	-	-	<0.05	-	-	-	-
Chlordane (Sum of total)	mg/kg	0.05	**<50***		**<50***	-	-	<0.05	-	-	-	<0.05	-	-	-	-
d-BHC	mg/kg	0.05	**<50***		**<50***	-	-	<0.05	-	-	-	<0.05	-	-	-	-
DDD	mg/kg	0.05	**<50***		**<50***	-	-	<0.05	-	-	-	<0.05	-	-	-	-
DDE	mg/kg	0.05	**<50***		**<50***	-	-	<0.05	-	-	-	<0.05	-	-	-	-
DDT	mg/kg	0.2	**<50***		**<50***	-	-	<0.2	-	-	-	<0.2	-	-	-	-
DDT+DDE+DDD (Sum of total) (Lab Reported)	mg/kg	0.05	**<50***		**<50***	-	-	<0.05	-	-	-	<0.05	-	-	-	-
Endosulfan	mg/kg	0.05	**60**		**240**	-	-	<0.05	-	-	-	<0.05	-	-	-	-
Endosulfan I	mg/kg	0.05				-	-	<0.05	-	-	-	<0.05	-	-	-	-
Endosulfan II	mg/kg	0.05				-	-	<0.05	-	-	-	<0.05	-	-	-	-
Endosulfan sulphate	mg/kg	0.05				-	-	<0.05	-	-	-	<0.05	-	-	-	-
Endrin	mg/kg	0.05	**<50***		**<50***	-	-	<0.05	-	-	-	<0.05	-	-	-	-
Endrin aldehyde	mg/kg	0.05	**<50***		**<50***	-	-	<0.05	-	-	-	<0.05	-	-	-	-
Endrin ketone	mg/kg	0.05				-	-	<0.05	-	-	-	<0.05	-	-	-	-
g-BHC	mg/kg	0.05	**<50***		**<50***	-	-	<0.05	-	-	-	<0.05	-	-	-	-
Heptachlor	mg/kg	0.05	**<50***		**<50***	-	-	<0.05	-	-	-	<0.05	-	-	-	-
Heptachlor epoxide	mg/kg	0.05	**<50***		**<50***	-	-	<0.05	-	-	-	<0.05	-	-	-	-
Hexachlorobenzene	mg/kg	0.05	**<50***		**<50***	-	-	<0.05	-	-	-	<0.05	-	-	-	-
Methoxychlor	mg/kg	0.2				-	-	<0.2	-	-	-	<0.2	-	-	-	-
Organophosphorous Pesticides																	
Azinphos-methyl	mg/kg	0.05				-	-	<0.05	-	-	-	<0.05	-	-	-	-
Bromophos-ethyl	mg/kg	0.05				-	-	<0.05	-	-	-	<0.05	-	-	-	-
Carbophenothion	mg/kg	0.05				-	-	<0.05	-	-	-	<0.05	-	-	-	-
Chlorfenvinphos	mg/kg	0.05				-	-	<0.05	-	-	-	<0.05	-	-	-	-
Chlorpyriphos	mg/kg	0.05	**4**		**16**	-	-	<0.05	-	-	-	<0.05	-	-	-	-
Chlorpyriphos-methyl	mg/kg	0.05				-	-	<0.05	-	-	-	<0.05	-	-	-	-
Demeton-s-methyl	mg/kg	0.05				-	-	<0.05	-	-	-	<0.05	-	-	-	-
Diazinon	mg/kg	0.05				-	-	<0.05	-	-	-	<0.05	-	-	-	-
Dichlorvos	mg/kg	0.05	**250^**		**1000^**	-	-	<0.05	-	-	-	<0.05	-	-	-	-
Dimethoate	mg/kg	0.05	**250^**		**1000^**	-	-	<0.05	-	-	-	<0.05	-	-	-	-
Ethion	mg/kg	0.05	**250^**		**1000^**	-	-	<0.05	-	-	-	<0.05	-	-	-	-
Fenamiphos	mg/kg	0.05				-	-	<0.05	-	-	-	<0.05	-	-	-	-
Fenitrothion	mg/kg	0.1	**250^**		**1000^**	-	-	-	-	-	-	-	-	-	-	-
Fenthion	mg/kg	0.05	**250^**		**1000^**	-	-	<0.05	-	-	-	<0.05	-	-	-	-
Malathion	mg/kg	0.05	**250^**		**1000^**	-	-	<0.05	-	-	-	<0.05	-	-	-	-
Parathion-methyl	mg/kg	0.2	**250^**		**1000^**	-	-	<0.2	-	-	-	<0.2	-	-	-	-
Monocrotophos	mg/kg	0.2				-	-	<0.2	-	-	-	<0.2	-	-	-	-
Parathion	mg/kg	0.2				-	-	<0.2	-	-	-	<0.2	-	-	-	-
Pirimphos-ethyl	mg/kg	0.05				-	-	<0.05	-	-	-	<0.05	-	-	-	-
Prothiofos	mg/kg	0.05				-	-	<0.05	-	-	-	<0.05	-	-	-	-
Ronnel	mg/kg	0.1				-	-	-	-	-	-	-	-	-	-	-
Phenols																	
Phenolics (Sum of total)	mg/kg	1				-	-	<1	<1	-	-	-	-	-	-	-
Polychlorinated Biphenyls																	
Aroclor 1016	mg/kg	0.1				-	-	-	-	-	-	-	-	-	-	-
Aroclor 1232	mg/kg	0.1				-	-	-	-	-	-	-	-	-	-	-
Aroclor 1242	mg/kg	0.1				-	-	-	-	-	-	-	-	-	-	-
Aroclor 1248	mg/kg	0.1				-	-	-	-	-	-	-	-	-	-	-
Aroclor 1254	mg/kg	0.1				-	-	-	-	-	-	-	-	-	-	-
Aroclor 1260	mg/kg	0.1				-	-	-	-	-	-	-	-	-	-	-
Aroclor 1221	mg/kg	0.1				-	-	-	-	-	-	-	-	-	-	-
PCB (Sum of Total-Lab Reported)	mg/kg	0.1	**<50**		**<50**	-	-	<0.1	<0.1	-	-	-	-	-	-	-
Volatile Organic Compounds																	
Cyclohexane	mg/kg	1				-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.5	**150**		**600**	-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
4-Chlorotoluene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-

						SRT-Soil Vapour										
					Drum											
					Location	SRT-BH416	SRT-BH416	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421
					Field_ID	SRT_BH416_1.5	SRT_BH416_3.0	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT_BH421_0.25	SRT_BH421_0.5	QCA102	QCB102	SRT_BH421_1.0
					Sample_Depth	1.5	3	0.5	1.5	2	3	0.25	0.5	0.5	0.5	1
					Sampled_Date	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	10-06-18	06-10-18
					Lab_Report	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	202499	ES1829955
ChemName	**output unit**	**EQL**	CT1 General Soild Waste (NSW)	SCC1 / TCLP1 General Solid Waste	CT2 / TCLP2 Restricted Solid Waste (NSW)											
1,2,3-Trichlorobenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.5	**86**		**344**	-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
2-Chlorotoluene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
Bromobenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
Chlorobenzene	mg/kg	0.5	**2000**		**8000**	-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
1,2,4-trimethylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
1,3,5-Trimethylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
Isopropylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
n-Butylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
n-Propylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
p-Isopropyltoluene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
sec-Butylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
Styrene	mg/kg	0.5	**60**		**240**	-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
tert-Butylbenzene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
Methyl Ethyl Ketone	mg/kg	5				-	<5	<5	-	<5	<5	-	-	-	-	-
2-Hexanone	mg/kg	5				-	<5	<5	-	<5	<5	-	-	-	-	-
Methyl iso-butyl ketone	mg/kg	5				-	<5	<5	-	<5	<5	-	-	-	-	-
Vinyl acetate	mg/kg	5				-	<5	<5	-	<5	<5	-	-	-	-	-
1,1,1,2-Tetrachloroethane	mg/kg	0.5	**200**		**800**	-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
1,1,2,2-Tetrachloroethane	mg/kg	0.5	**26**		**104**	-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
1,1,1-Trichloroethane	mg/kg	0.5	**600**		**2400**	-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
1,1,2-Trichloroethane	mg/kg	0.5	**24**		**96**	-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
1,2,3-Trichloropropane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
1,2-Dibromo-3-chloropropane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
1,2-Dibromoethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
1,1-Dichloroethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
1,2-Dichloroethane	mg/kg	0.5	**10**		**40**	-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
1,1-Dichloroethene	mg/kg	0.5	**14**		**56**	-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
cis-1,2-Dichloroethene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
trans-1,2-dichloroethene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
1,2-Dichloropropane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
1,3-Dichloropropane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
2,2-Dichloropropane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
1,1-Dichloropropene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
cis-1,3-Dichloropropene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
trans-1,3-dichloropropene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
cis-1,4-Dichloro-2-butene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
trans-1,4-Dichloro-2-butene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
Bromochloromethane	mg/kg	1				-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
Bromoform	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
Bromomethane	mg/kg	5				-	<5	<5	-	<5	<5	-	-	-	-	-
Carbon disulfide	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
Carbon tetrachloride	mg/kg	0.5	**10**		**40**	-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
Chlorodibromomethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
Chloroethane	mg/kg	5				-	<5	<5	-	<5	<5	-	-	-	-	-
Chloroform	mg/kg	0.5	**120**		**480**	-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
Chloromethane	mg/kg	5				-	<5	<5	-	<5	<5	-	-	-	-	-
Dibromomethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
Dichlorodifluoromethane	mg/kg	5				-	<5	<5	-	<5	<5	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
Iodomethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
Pentachloroethane	mg/kg	0.5				-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
Trichloroethene	mg/kg	0.5	**10**		**40**	-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
Tetrachloroethene	mg/kg	0.5	**14**		**56**	-	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	-
Trichlorofluoromethane	mg/kg	5				-	<5	<5	-	<5	<5	-	-	-	-	-
Vinyl chloride	mg/kg	5	**4**		**16**	-	<5	<5	-	<5	<5	-	-	-	-	-
Acid Sulfate Soils Analysis																
pH OX	pH Unit	0.1				-	5.2	-	-	-	-	-	-	-	-	-

						Drum	SRT-Soil Vapour										
						Location	SRT-BH416	SRT-BH416	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421
						Field_ID	SRT_BH416_1.5	SRT_BH416_3.0	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT_BH421_0.25	SRT_BH421_0.5	QCA102	QCB102	SRT_BH421_1.0
						Sample_Depth	1.5	3	0.5	1.5	2	3	0.25	0.5	0.5	0.5	1
						Sampled_Date	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	10-06-18	06-10-18
						Lab_Report	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	202499	ES1829955
ChemName	**output unit**	**EQL**	CT1 General Soild Waste (NSW)	SCC1 / TCLP1 General Solid Waste	CT2 / TCLP2 Restricted Solid Waste (NSW)												
Titratable Sulfidic Acidity	moles H+/t	2				-	66	-	-	-	-	-	-	-	-	-	
Net Acidity excluding ANC (sulfur units)	moles H+/t	0.02				-	<0.02	-	-	-	-	-	-	-	-	-	
ANC Fineness Factor	-	0.5				-	1.5	-	-	-	-	-	-	-	-	-	
Sulfidic - Acid Reacted Calcium	%	0.02				-	<0.02	-	-	-	-	-	-	-	-	-	
Sulfidic - Acid Reacted Magnesium	%S	0.02				-	<0.02	-	-	-	-	-	-	-	-	-	
pH KCl	pH Unit	0.1				-	6	-	-	-	-	-	-	-	-	-	
Titratable Actual Acidity	moles H+/t	2				-	<2	-	-	-	-	-	-	-	-	-	
KCl Extractable Sulfur	% S	0.02				-	<0.02	-	-	-	-	-	-	-	-	-	
Titratable Peroxide Acidity	moles H+/t	2				-	66	-	-	-	-	-	-	-	-	-	
Acidity - Peroxide Oxidisable Sulfur	moles H+/t	10				-	<10	-	-	-	-	-	-	-	-	-	
Acid Reacted Calcium	%	0.02				-	<0.02	-	-	-	-	-	-	-	-	-	
Acidity - Acid Reacted Calcium	mole H+/t	10				-	<10	-	-	-	-	-	-	-	-	-	
Magnesium in Peroxide	%	0.02				-	<0.02	-	-	-	-	-	-	-	-	-	
Acid Reacted Magnesium	%	0.02				-	<0.02	-	-	-	-	-	-	-	-	-	
Acidity - Acid Reacted Magnesium	mole H+/t	10				-	<10	-	-	-	-	-	-	-	-	-	
Net Acidity (sulfur units)	%S	0.02				-	<0.02	-	-	-	-	-	-	-	-	-	
Net Acidity (acidity units)	moles H+/t	10				-	<10	-	-	-	-	-	-	-	-	-	
Liming Rate	kg CaCO3/t	1				-	<1	-	-	-	-	-	-	-	-	-	
a-Net Acidity without ANCE (acidity units)	moles H+/t	10				-	<10	-	-	-	-	-	-	-	-	-	
Liming rate without ANCE kg CaCO3/t	kg CaCo3/t	1				-	<1	-	-	-	-	-	-	-	-	-	
Per- and polyfluoroalkyl substances (PFAS)																	
Sum of WA DER PFAS (n=10)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	
Sum of PFASs (n=28)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	
10:2 Fluorotelomer sulfonic acid	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-	
4:2 Fluorotelomer sulfonic acid	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-	
8:2 Fluorotelomer sulfonate	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-	
N-Et-FOSA	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-	
N-Et-FOSE	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-	
N-Me-FOSA	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-	
N-Me-FOSE	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-	
Perfluorobutanoic acid (PFBA)	mg/kg	0.001				-	-	-	-	-	-	-	-	-	-	-	
Perfluoroheptane sulfonic acid	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	
Perfluoro-n-pentanoic acid (PFPeA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	
Perfluoropentane sulfonic acid	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	
PFDcS	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	
N-methyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	
Perfluorobutanesulfonic acid (PFBS)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002		**1.8**		-	-	-	-	-	-	-	-	-	-	-	
Perfluorohexanesulfonic acid (PFHxS)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	
Perfluorooctanesulfonic acid (PFOS)	mg/L	0.00001		**0.05**		-	-	-	-	-	-	-	-	-	-	-	
Perfluorohexanesulfonic acid (PFHxS)	mg/L	0.00002				-	-	-	-	-	-	-	-	-	-	-	
Perfluorooctanoate (PFOA)	mg/kg	0.0002		**18**		-	-	-	-	-	-	-	-	-	-	-	
Perfluorooctanoate (PFOA)	mg/L	0.00001		**0.5**		-	-	-	-	-	-	-	-	-	-	-	
Perfluorononanoic acid (PFNA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-	
N-ethyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	
Perfluorooctanesulfonamide (PFOSA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005				-	-	-	-	-	-	-	-	-	-	-	
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0002				-	-	-	-	-	-	-	-	-	-	-	

						Drum	SRT-Soil Vapour										
						Location	SRT-BH416	SRT-BH416	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH417	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421	SRT-BH421
						Field_ID	SRT_BH416_1.5	SRT_BH416_3.0	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT_BH421_0.25	SRT_BH421_0.5	QCA102	QCB102	SRT_BH421_1.0
						Sample_Depth	1.5	3	0.5	1.5	2	3	0.25	0.5	0.5	0.5	1
						Sampled_Date	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	06-10-18	10-06-18	06-10-18
						Lab_Report	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	ES1829955	202499	ES1829955
ChemName	**output unit**	**EQL**	CT1 General Soild Waste (NSW)	SCC1 / TCLP1 General Solid Waste	CT2 / TCLP2 Restricted Solid Waste (NSW)												

Data Comments

#1 Pale brown sandy soil plus one piece of bonded asbestos cement sheeting approximately 12 x 9 x 2mm.
#2 A collection of crushed building debris.
#3 Pale brown sandy soil with slag debris.
#4 Grey rocky soil with organic matter.
#5 Pale brown sandy soil.
#6 Mid brown sandy soil.
#7 Mid grey sandy soil.
#8 Brown sandy soil.
#9 G.MORGAN
#10 C.OWLER
#11 E.DAOS
#12 No*
#13 Ch
#14 No

* Total concentration of scheduled chemicals to be <50mg/kg for CT1 and CT2
^ Total concentration of moderately harmful pesticides to be <250 mg/kg for CT1 and <1000 for CT2.
^^ Criteria included where leachate analysis was undertaken only.

					Drum																	
					Location	SRT-BH421	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422										
					Field_ID	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0	QCA103	QCB103	SRT_BH422_1.5	SRT_BH422_3.0										
					Sample_Depth	3	0.5	1	1	1	1.5	3										
					Sampled_Date	06-10-18	07-10-18	07-10-18	06-10-18	10-07-18	07-10-18	07-10-18										
					Lab_Report	ES1829955	ES1829955	ES1829955	ES1829955	202499	ES1829955	ES1829955										
ChemName	output unit	EQL	CT1 General Soild Waste (NSW)	SCC1 / TCLP1 General Solid Waste	CT2 / TCLP2 Restricted Solid Waste (NSW)								Statistical Summary									
													Number of Results	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect	Number of Guideline Exceedances			
Asbestos																						
APPROVED IDENTIFIER:	--					-	1[#9]	-	-	-	-	-	7	7	1	1	1	1	0			
Asbestos in soil (>7mm ACM)	%w/w	0.01				-	<0.01	-	-	-	-	-	7	0	<0.01	ND	<0.01	ND	0			
Asbestos Type	No					-	-	-	-	-	-	-	0	0	0	ND	0	ND	0			
Asbestos (1-Detect or <1-Non-Detect)	No	0.1				-	0[#12]	-	-	-	-	-	7	0	<0	ND	0	ND	0			
Asbestos Containing Material	mg/kg	0.1				-	<0.1	-	-	-	-	-	7	0	<0.1	ND	<0.1	ND	0			
Asbestos Fines	mg/kg	5				-	0[#12]	-	-	-	-	-	7	0	<0	ND	0	ND	0			
Asbestos from FA & AF in Soil	%w/w	0.001				-	<0.001	-	-	-	-	-	7	0	<0.001	ND	<0.001	ND	0			
Fibrous Asbestos	mg/kg	0.0004				-	<0.0004	-	-	-	-	-	7	0	<0.0004	ND	<0.0004	ND	0			
Mass of test sample	g	0.1				-	577	-	-	-	-	-	7	7	408	408	658	658	0			
Sample weight (dry)	g	0.01				-	577	-	-	-	-	-	7	7	408	408	658	658	0			
TPH Group - Waste Classification																						
TRH C6 - C9 Fraction	mg/kg	10	**650**		**2600**	<10	<10	<10	<10	<25	<10	-	22	0	<10	ND	<25	ND	0			
TRH C10 - C14 Fraction	mg/kg	50				<50	<50	<50	<50	<50	<50	-	22	0	<50	ND	<50	ND	0			
TRH C15 - C28 Fraction	mg/kg	100				<100	<100	<100	<100	<100	<100	-	22	3	<100	120	170	170	0			
TRH C29 - C36 Fraction	mg/kg	100				<100	<100	<100	<100	<100	<100	-	22	3	<100	170	200	200	0			
TRH+C10 - C36 (Sum of total) (Lab Reported)	mg/kg	50	**10000**		**40000**	<50	<50	<50	<50	-	<50	-	19	2	<50	320	330	330	0			
BTEX																						
Benzene	mg/kg	0.2	**10**		**40**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	26	0	<0.2	ND	<0.2	ND	0			
Toluene	mg/kg	0.5	**288**		**1152**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	26	0	<0.5	ND	<0.5	ND	0			
Ethylbenzene	mg/kg	0.5	**600**		**2400**	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	26	0	<0.5	ND	<1	ND	0			
Xylenes (m & p)	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	<2	<0.5	-	26	0	<0.5	ND	<2	ND	0			
Xylene (o)	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	26	0	<0.5	ND	<1	ND	0			
Xylenes (Sum of total) (Lab Reported)	mg/kg	0.5	**1,000**		**4,000**	<0.5	<0.5	<0.5	<0.5	<1	<0.5	-	22	0	<0.5	ND	<1	ND	0			
Total BTEX	mg/kg	0.2				<0.2	<0.2	<0.2	<0.2	-	<0.2	-	19	0	<0.2	ND	<0.2	ND	0			
Heavy Metals																						
Arsenic	mg/kg	5	**100**		**400**	<5	<5	<5	<5	<4	<5	-	22	1	<4	6	6	6	0			
Cadmium	mg/kg	1	**20**		**80**	<1	<1	<1	<1	<0.4	<1	-	22	1	<0.4	6	6	6	0			
Chromium	mg/kg	2	**100**		**400**	<2	3	<2	<2	<1	<2	-	22	12	<1	2	22	22	0			
Copper	mg/kg	5				<5	30	<5	<5	1	5	-	22	12	1	1	40	40	0			
Lead	mg/kg	5	**100**	**1,500**	**400**	<5	**261**	31	<5	7	29	-	22	15	<5	7	813	813	3			
Lead TCLP	mg/L	0.1		**5**		-	**0.1**	-	-	-	-	-	2	2	0.1	0.1	6.8	6.8	1			
Mercury	mg/kg	0.1	**4**	**50**	**16**	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	-	22	3	<0.1	0.2	1.6	1.6	0			
Nickel	mg/kg	2	**40**		**160**	<2	3	<2	<2	<1	<2	-	22	9	<1	3	23	23	0			
Zinc	mg/kg	5				18	150	47	13	12	108	-	22	19	<5	6	2100	2100	0			
PAH																						
Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2				-	-	-	-	<0.2	-	-	3	1	<0.2	1	1	1	0			
Acenaphthene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	-	22	1	<0.1	0.1	<0.5	0.1	0			
Acenaphthylene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	-	22	0	<0.1	ND	<0.5	ND	0			
Anthracene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	-	22	2	<0.1	0.3	0.6	0.6	0			
Benz(a)anthracene	mg/kg	0.5				<0.5	1.4	<0.5	0.6	<0.1	0.9	-	22	8	<0.1	0.5	1.4	1.4	0			
Benzo(a)pyrene	mg/kg	0.5	**0.8**	**10**	**3.2**	<0.5	**1.4**	<0.5	0.6	0.06	**0.9**	-	22	10	0.06	0.06	1.4	1.4	4			
Benzo(a)pyrene TCLP				**0.04**		-	<0.5	-	-	-	-	-	1	0	<0.5	ND	<0.5	ND	1			
Benzo(a)pyrene TEQ (lower bound)*	mg/kg	0.5				<0.5	1.8	<0.5	0.7	<0.5	1.1	-	22	8	<0.5	0.7	1.8	1.8	0			
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	0.5				0.6	2	0.6	1	<0.5	1.4	-	22	20	<0.5	0.6	2	2	0			
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	0.5				1.2	2.3	1.2	1.3	<0.5	1.7	-	22	20	<0.5	1.2	2.3	2.3	0			
Benzo(b)&(j)fluoranthene	mg/kg	0.5				<0.5	1.4	<0.5	0.6	-	0.8	-	19	7	<0.5	0.6	1.4	1.4	0			
Benzo(g,h,i)perylene	mg/kg	0.5				<0.5	0.6	<0.5	<0.5	<0.1	<0.5	-	22	2	<0.1	0.5	0.6	0.6	0			
Benzo(k)fluoranthene	mg/kg	0.5				<0.5	0.6	<0.5	<0.5	-	<0.5	-	19	1	<0.5	0.6	0.6	0.6	0			
Chrysene	mg/kg	0.5				<0.5	1.2	<0.5	0.5	<0.1	0.8	-	22	8	<0.1	0.5	1.2	1.2	0			
Dibenz(a,h)anthracene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	-	22	0	<0.1	ND	<0.5	ND	0			
Fluoranthene	mg/kg	0.5				<0.5	3.3	0.8	1.3	0.1	2.1	-	22	11	0.1	0.1	3.3	3.3	0			
Fluorene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	-	22	1	<0.1	0.2	<0.5	0.2	0			
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5				<0.5	0.5	<0.5	<0.5	<0.1	<0.5	-	22	2	<0.1	0.4	0.5	0.5	0			
Naphthalene	mg/kg	0.5				<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	-	26	0	<0.1	ND	<1	ND	0			
Phenanthrene	mg/kg	0.5				<0.5	1.8	<0.5	0.6	<0.1	0.9	-	22	7	<0.1	0.6	2	2	0			
Pyrene	mg/kg	0.5				<0.5	3.2	0.8	1.4	0.1	2	-	22	11	0.1	0.1	3.2	3.2	0			
PAH (Sum of Common 16 PAHs - Lab Reported)	mg/kg	0.5	**200**		**800**	<0.5	15.4	1.6	5.6	-	8.4	-	19	8	<0.5	1.6	15.4	15.4	0			
Total PAH (NEPM/WHO 16)	mg/kg	0.05				-	-	-	-	0.3	-	-	3	3	0.3	0.3	11	11	0			
Organochlorine Pesticides																						
a-BHC	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	-	-	7	0	<0.05	ND	<0.1	ND	0			

														Statistical Summary						
					Drum															
					Location	SRT-BH421	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422								
					Field_ID	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0	QCA103	QCB103	SRT_BH422_1.5	SRT_BH422_3.0								
					Sample_Depth	3	0.5	1	1	1	1.5	3								
					Sampled_Date	06-10-18	07-10-18	07-10-18	06-10-18	10-07-18	07-10-18	07-10-18								
					Lab_Report	ES1829955	ES1829955	ES1829955	ES1829955	202499	ES1829955	ES1829955								
ChemName	**output unit**	**EQL**	CT1 General Soild Waste (NSW)	SCC1 / TCLP1 General Solid Waste	CT2 / TCLP2 Restricted Solid Waste (NSW)									Number of Results	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect	Number of Guideline Exceedances
Aldrin	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Dieldrin	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Aldrin & Dieldrin (Sum of total) (Lab Reported)	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	-	-		6	0	<0.05	ND	<0.05	ND	0
b-BHC	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
cis-Chlordane	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
trans-Chlordane	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Chlordane (Sum of total)	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	-	-		6	0	<0.05	ND	<0.05	ND	0
d-BHC	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
DDD	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
DDE	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
DDT	mg/kg	0.2	**<50***		**<50***	-	<0.2	-	-	-	-	-		7	0	<0.1	ND	<0.2	ND	0
DDT+DDE+DDD (Sum of total) (Lab Reported)	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Endosulfan	mg/kg	0.05	**60**		**240**	-	<0.05	-	-	-	-	-		6	0	<0.05	ND	<0.05	ND	0
Endosulfan I	mg/kg	0.05				-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Endosulfan II	mg/kg	0.05				-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Endosulfan sulphate	mg/kg	0.05				-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Endrin	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Endrin aldehyde	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Endrin ketone	mg/kg	0.05				-	<0.05	-	-	-	-	-		6	0	<0.05	ND	<0.05	ND	0
g-BHC	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Heptachlor	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Heptachlor epoxide	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Hexachlorobenzene	mg/kg	0.05	**<50***		**<50***	-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Methoxychlor	mg/kg	0.2				-	<0.2	-	-	-	-	-		7	0	<0.1	ND	<0.2	ND	0
Organophosphorous Pesticides																				
Azinphos-methyl	mg/kg	0.05				-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Bromophos-ethyl	mg/kg	0.05				-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Carbophenothion	mg/kg	0.05				-	<0.05	-	-	-	-	-		6	0	<0.05	ND	<0.05	ND	0
Chlorfenvinphos	mg/kg	0.05				-	<0.05	-	-	-	-	-		6	0	<0.05	ND	<0.05	ND	0
Chlorpyriphos	mg/kg	0.05	**4**		**16**	-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Chlorpyriphos-methyl	mg/kg	0.05				-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Demeton-s-methyl	mg/kg	0.05				-	<0.05	-	-	-	-	-		6	0	<0.05	ND	<0.05	ND	0
Diazinon	mg/kg	0.05				-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Dichlorvos	mg/kg	0.05	**250^**		**1000^**	-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Dimethoate	mg/kg	0.05	**250^**		**1000^**	-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Ethion	mg/kg	0.05	**250^**		**1000^**	-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Fenamiphos	mg/kg	0.05				-	<0.05	-	-	-	-	-		6	0	<0.05	ND	<0.05	ND	0
Fenitrothion	mg/kg	0.1	**250^**		**1000^**	-	-	-	-	-	-	-		1	0	<0.1	ND	<0.1	ND	0
Fenthion	mg/kg	0.05	**250^**		**1000^**	-	<0.05	-	-	-	-	-		6	0	<0.05	ND	<0.05	ND	0
Malathion	mg/kg	0.05	**250^**		**1000^**	-	<0.05	-	-	-	-	-		7	0	<0.05	ND	<0.1	ND	0
Parathion-methyl	mg/kg	0.2	**250^**		**1000^**	-	<0.2	-	-	-	-	-		6	0	<0.2	ND	<0.2	ND	0
Monocrotophos	mg/kg	0.2				-	<0.2	-	-	-	-	-		6	0	<0.2	ND	<0.2	ND	0
Parathion	mg/kg	0.2				-	<0.2	-	-	-	-	-		7	0	<0.1	ND	<0.2	ND	0
Pirimphos-ethyl	mg/kg	0.05				-	<0.05	-	-	-	-	-		6	0	<0.05	ND	<0.05	ND	0
Prothiofos	mg/kg	0.05				-	<0.05	-	-	-	-	-		6	0	<0.05	ND	<0.05	ND	0
Ronnel	mg/kg	0.1				-	-	-	-	-	-	-		1	0	<0.1	ND	<0.1	ND	0
Phenols																				
Phenolics (Sum of total)	mg/kg	1				-	<1	-	-	-	-	-		7	0	<1	ND	<5	ND	0
Polychlorinated Biphenyls																				
Aroclor 1016	mg/kg	0.1				-	-	-	-	-	-	-		1	0	<0.1	ND	<0.1	ND	0
Aroclor 1232	mg/kg	0.1				-	-	-	-	-	-	-		1	0	<0.1	ND	<0.1	ND	0
Aroclor 1242	mg/kg	0.1				-	-	-	-	-	-	-		1	0	<0.1	ND	<0.1	ND	0
Aroclor 1248	mg/kg	0.1				-	-	-	-	-	-	-		1	0	<0.1	ND	<0.1	ND	0
Aroclor 1254	mg/kg	0.1				-	-	-	-	-	-	-		1	0	<0.1	ND	<0.1	ND	0
Aroclor 1260	mg/kg	0.1				-	-	-	-	-	-	-		1	0	<0.1	ND	<0.1	ND	0
Aroclor 1221	mg/kg	0.1				-	-	-	-	-	-	-		1	0	<0.1	ND	<0.1	ND	0
PCB (Sum of Total-Lab Reported)	mg/kg	0.1	**<50**		**<50**	-	<0.1	-	-	-	-	-		7	0	<0.1	ND	<0.1	ND	0
Volatile Organic Compounds																				
Cyclohexane	mg/kg	1				-	-	-	-	-	-	-		1	0	<1	ND	<1	ND	0
1,4-Dichlorobenzene	mg/kg	0.5	**150**		**600**	-	-	-	-	-	-	-		11	0	<0.5	ND	<1	ND	0
4-Chlorotoluene	mg/kg	0.5				-	-	-	-	-	-	-		11	0	<0.5	ND	<1	ND	0

															Statistical Summary						
					Drum																
					Location	SRT-BH421	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422									
					Field_ID	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0	QCA103	QCB103	SRT_BH422_1.5	SRT_BH422_3.0									
					Sample_Depth	3	0.5	1	1	1	1.5	3									
					Sampled_Date	06-10-18	07-10-18	07-10-18	06-10-18	10-07-18	07-10-18	07-10-18									
					Lab_Report	ES1829955	ES1829955	ES1829955	ES1829955	202499	ES1829955	ES1829955									
ChemName	**output unit**	**EQL**	CT1 General Soild Waste (NSW)	SCC1 / TCLP1 General Solid Waste	CT2 / TCLP2 Restricted Solid Waste (NSW)								Number of Results	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect	Number of Guideline Exceedances
1,2,3-Trichlorobenzene	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
1,2,4-Trichlorobenzene	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
1,2-Dichlorobenzene	mg/kg	0.5	**86**		**344**	-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
1,3-Dichlorobenzene	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
2-Chlorotoluene	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
Bromobenzene	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
Chlorobenzene	mg/kg	0.5	**2000**		**8000**	-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
1,2,4-trimethylbenzene	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
1,3,5-Trimethylbenzene	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
Isopropylbenzene	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
n-Butylbenzene	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
n-Propylbenzene	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
p-Isopropyltoluene	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
sec-Butylbenzene	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
Styrene	mg/kg	0.5	**60**		**240**	-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
tert-Butylbenzene	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
Methyl Ethyl Ketone	mg/kg	5				-	-	-	-	-	-	-	10	0	<5	ND	<5	ND	0
2-Hexanone	mg/kg	5				-	-	-	-	-	-	-	10	0	<5	ND	<5	ND	0
Methyl iso-butyl ketone	mg/kg	5				-	-	-	-	-	-	-	10	0	<5	ND	<5	ND	0
Vinyl acetate	mg/kg	5				-	-	-	-	-	-	-	10	0	<5	ND	<5	ND	0
1,1,1,2-Tetrachloroethane	mg/kg	0.5	**200**		**800**	-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
1,1,2,2-Tetrachloroethane	mg/kg	0.5	**26**		**104**	-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
1,1,1-Trichloroethane	mg/kg	0.5	**600**		**2400**	-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
1,1,2-Trichloroethane	mg/kg	0.5	**24**		**96**	-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
1,2,3-Trichloropropane	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
1,2-Dibromo-3-chloropropane	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
1,2-Dibromoethane	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
1,1-Dichloroethane	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
1,2-Dichloroethane	mg/kg	0.5	**10**		**40**	-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
1,1-Dichloroethene	mg/kg	0.5	**14**		**56**	-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
cis-1,2-Dichloroethene	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
trans-1,2-dichloroethene	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
1,2-Dichloropropane	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
1,3-Dichloropropane	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
2,2-Dichloropropane	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
1,1-Dichloropropene	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
cis-1,3-Dichloropropene	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
trans-1,3-dichloropropene	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
cis-1,4-Dichloro-2-butene	mg/kg	0.5				-	-	-	-	-	-	-	10	0	<0.5	ND	<0.5	ND	0
trans-1,4-Dichloro-2-butene	mg/kg	0.5				-	-	-	-	-	-	-	10	0	<0.5	ND	<0.5	ND	0
Bromochloromethane	mg/kg	1				-	-	-	-	-	-	-	1	0	<1	ND	<1	ND	0
Bromodichloromethane	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
Bromoform	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
Bromomethane	mg/kg	5				-	-	-	-	-	-	-	11	0	<1	ND	<5	ND	0
Carbon disulfide	mg/kg	0.5				-	-	-	-	-	-	-	10	0	<0.5	ND	<0.5	ND	0
Carbon tetrachloride	mg/kg	0.5	**10**		**40**	-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
Chlorodibromomethane	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
Chloroethane	mg/kg	5				-	-	-	-	-	-	-	11	0	<1	ND	<5	ND	0
Chloroform	mg/kg	0.5	**120**		**480**	-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
Chloromethane	mg/kg	5				-	-	-	-	-	-	-	11	0	<1	ND	<5	ND	0
Dibromomethane	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
Dichlorodifluoromethane	mg/kg	5				-	-	-	-	-	-	-	11	0	<1	ND	<5	ND	0
Hexachlorobutadiene	mg/kg	0.5				-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
Iodomethane	mg/kg	0.5				-	-	-	-	-	-	-	10	0	<0.5	ND	<0.5	ND	0
Pentachloroethane	mg/kg	0.5				-	-	-	-	-	-	-	10	0	<0.5	ND	<0.5	ND	0
Trichloroethene	mg/kg	0.5	**10**		**40**	-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
Tetrachloroethene	mg/kg	0.5	**14**		**56**	-	-	-	-	-	-	-	11	0	<0.5	ND	<1	ND	0
Trichlorofluoromethane	mg/kg	5				-	-	-	-	-	-	-	11	0	<1	ND	<5	ND	0
Vinyl chloride	mg/kg	5	**4**		**16**	-	-	-	-	-	-	-	11	0	<1	ND	<5	ND	10
Acid Sulfate Soils Analysis																			
pH OX	pH Unit	0.1				5.2	-	-	-	-	-	5.1	5	5	4.6	4.6	5.2	5.2	0

														Statistical Summary						
					Drum															
					Location	SRT-BH421	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422								
					Field_ID	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0	QCA103	QCB103	SRT_BH422_1.5	SRT_BH422_3.0								
					Sample_Depth	3	0.5	1	1	1	1.5	3								
					Sampled_Date	06-10-18	07-10-18	07-10-18	06-10-18	10-07-18	07-10-18	07-10-18								
					Lab_Report	ES1829955	ES1829955	ES1829955	ES1829955	202499	ES1829955	ES1829955								
ChemName	**output unit**	**EQL**	CT1 General Soild Waste (NSW)	SCC1 / TCLP1 General Solid Waste	CT2 / TCLP2 Restricted Solid Waste (NSW)								Number of Results	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect	Number of Guideline Exceedances
Titratable Sulfidic Acidity	moles H+/t	2				70	-	-	-	-	-	77	5	5	8	8	77	77	0
Net Acidity excluding ANC (sulfur units)	moles H+/t	0.02				<0.02	-	-	-	-	-	<0.02	5	0	<0.02	ND	<0.02	ND	0
ANC Fineness Factor	-	0.5				1.5	-	-	-	-	-	1.5	5	5	1.5	1.5	1.5	1.5	0
Sulfidic - Acid Reacted Calcium	%	0.02				<0.02	-	-	-	-	-	<0.02	5	0	<0.02	ND	<0.02	ND	0
Sulfidic - Acid Reacted Magnesium	%S	0.02				<0.02	-	-	-	-	-	<0.02	5	0	<0.02	ND	<0.02	ND	0
pH KCl	pH Unit	0.1				6	-	-	-	-	-	5.9	5	5	5.8	5.8	6	6	0
Titratable Actual Acidity	moles H+/t	2				<2	-	-	-	-	-	<2	5	1	<2	2	2	2	0
KCl Extractable Sulfur	% S	0.02				<0.02	-	-	-	-	-	<0.02	5	0	<0.02	ND	<0.02	ND	0
Titratable Peroxide Acidity	moles H+/t	2				70	-	-	-	-	-	77	5	5	8	8	77	77	0
Acidity - Peroxide Oxidisable Sulfur	moles H+/t	10				<10	-	-	-	-	-	<10	5	0	<10	ND	<10	ND	0
Acid Reacted Calcium	%	0.02				<0.02	-	-	-	-	-	<0.02	5	0	<0.02	ND	<0.02	ND	0
Acidity - Acid Reacted Calcium	mole H+/t	10				<10	-	-	-	-	-	<10	5	0	<10	ND	<10	ND	0
Magnesium in Peroxide	%	0.02				<0.02	-	-	-	-	-	<0.02	5	0	<0.02	ND	<0.02	ND	0
Acid Reacted Magnesium	%	0.02				<0.02	-	-	-	-	-	<0.02	5	0	<0.02	ND	<0.02	ND	0
Acidity - Acid Reacted Magnesium	mole H+/t	10				<10	-	-	-	-	-	<10	5	0	<10	ND	<10	ND	0
Net Acidity (sulfur units)	%S	0.02				<0.02	-	-	-	-	-	<0.02	5	0	<0.02	ND	<0.02	ND	0
Net Acidity (acidity units)	moles H+/t	10				<10	-	-	-	-	-	<10	5	0	<10	ND	<10	ND	0
Liming Rate	kg CaCO3/t	1				<1	-	-	-	-	-	<1	5	0	<1	ND	<1	ND	0
a-Net Acidity without ANCE (acidity units)	moles H+/t	10				<10	-	-	-	-	-	<10	5	0	<10	ND	<10	ND	0
Liming rate without ANCE kg CaCO3/t	kg CaCo3/t	1				<1	-	-	-	-	-	<1	5	0	<1	ND	<1	ND	0
Per- and polyfluoroalkyl substances (PFAS)																			
Sum of WA DER PFAS (n=10)	mg/kg	0.0002				0.0002	-	-	-	-	-	-	1	1	0.0002	0.0002	0.0002	0.0002	0
Sum of PFASs (n=28)	mg/kg	0.0002				0.0002	-	-	-	-	-	-	1	1	0.0002	0.0002	0.0002	0.0002	0
10:2 Fluorotelomer sulfonic acid	mg/kg	0.0005				<0.0005	-	-	-	-	-	-	1	0	<0.0005	ND	<0.0005	ND	0
4:2 Fluorotelomer sulfonic acid	mg/kg	0.0005				<0.0005	-	-	-	-	-	-	1	0	<0.0005	ND	<0.0005	ND	0
8:2 Fluorotelomer sulfonate	mg/kg	0.0005				<0.0005	-	-	-	-	-	-	1	0	<0.0005	ND	<0.0005	ND	0
N-Et-FOSA	mg/kg	0.0005				<0.0005	-	-	-	-	-	-	1	0	<0.0005	ND	<0.0005	ND	0
N-Et-FOSE	mg/kg	0.0005				<0.0005	-	-	-	-	-	-	1	0	<0.0005	ND	<0.0005	ND	0
N-Me-FOSA	mg/kg	0.0005				<0.0005	-	-	-	-	-	-	1	0	<0.0005	ND	<0.0005	ND	0
N-Me-FOSE	mg/kg	0.0005				<0.0005	-	-	-	-	-	-	1	0	<0.0005	ND	<0.0005	ND	0
Perfluorobutanoic acid (PFBA)	mg/kg	0.001				<0.001	-	-	-	-	-	-	1	0	<0.001	ND	<0.001	ND	0
Perfluoroheptane sulfonic acid	mg/kg	0.0002				<0.0002	-	-	-	-	-	-	1	0	<0.0002	ND	<0.0002	ND	0
Perfluoro-n-pentanoic acid (PFPeA)	mg/kg	0.0002				<0.0002	-	-	-	-	-	-	1	0	<0.0002	ND	<0.0002	ND	0
Perfluoropentane sulfonic acid	mg/kg	0.0002				<0.0002	-	-	-	-	-	-	1	0	<0.0002	ND	<0.0002	ND	0
PFDcS	mg/kg	0.0002				<0.0002	-	-	-	-	-	-	1	0	<0.0002	ND	<0.0002	ND	0
N-methyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002				<0.0002	-	-	-	-	-	-	1	0	<0.0002	ND	<0.0002	ND	0
Perfluorobutanesulfonic acid (PFBS)	mg/kg	0.0002				<0.0002	-	-	-	-	-	-	1	0	<0.0002	ND	<0.0002	ND	0
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002				<0.0002	-	-	-	-	-	-	1	0	<0.0002	ND	<0.0002	ND	0
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0002				<0.0002	-	-	-	-	-	-	1	0	<0.0002	ND	<0.0002	ND	0
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002				<0.0002	-	-	-	-	-	-	1	0	<0.0002	ND	<0.0002	ND	0
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002		**1.8**		0.0002	-	-	-	-	-	-	1	1	0.0002	0.0002	0.0002	0.0002	0
Perfluorohexanesulfonic acid (PFHxS)	mg/kg	0.0002				<0.0002	-	-	-	-	-	-	1	0	<0.0002	ND	<0.0002	ND	0
Perfluorooctanesulfonic acid (PFOS)	mg/L	0.00001		**0.05**		<0.00001	-	-	-	-	-	-	1	0	<0.00001	ND	<0.00001	ND	0
Perfluorohexanesulfonic acid (PFHxS)	mg/L	0.00002				<0.00002	-	-	-	-	-	-	1	0	<0.00002	ND	<0.00002	ND	0
Perfluorooctanoate (PFOA)	mg/kg	0.0002		**18**		<0.0002	-	-	-	-	-	-	1	0	<0.0002	ND	<0.0002	ND	0
Perfluorooctanoate (PFOA)	mg/L	0.00001		**0.5**		<0.00001	-	-	-	-	-	-	1	0	<0.00001	ND	<0.00001	ND	0
Perfluorononanoic acid (PFNA)	mg/kg	0.0002				<0.0002	-	-	-	-	-	-	1	0	<0.0002	ND	<0.0002	ND	0
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002				<0.0002	-	-	-	-	-	-	1	0	<0.0002	ND	<0.0002	ND	0
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0005				<0.0005	-	-	-	-	-	-	1	0	<0.0005	ND	<0.0005	ND	0
N-ethyl-perfluorooctanesulfonamidoacetic acid	mg/kg	0.0002				<0.0002	-	-	-	-	-	-	1	0	<0.0002	ND	<0.0002	ND	0
Perfluorooctanesulfonamide (PFOSA)	mg/kg	0.0002				<0.0002	-	-	-	-	-	-	1	0	<0.0002	ND	<0.0002	ND	0
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005				<0.0005	-	-	-	-	-	-	1	0	<0.0005	ND	<0.0005	ND	0
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002				<0.0002	-	-	-	-	-	-	1	0	<0.0002	ND	<0.0002	ND	0
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0002				<0.0002	-	-	-	-	-	-	1	0	<0.0002	ND	<0.0002	ND	0

						Drum							
						Location	SRT-BH421	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422	SRT-BH422
						Field_ID	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0	QCA103	QCB103	SRT_BH422_1.5	SRT_BH422_3.0
						Sample_Depth	3	0.5	1	1	1	1.5	3
						Sampled_Date	06-10-18	07-10-18	07-10-18	06-10-18	10-07-18	07-10-18	07-10-18
						Lab_Report	ES1829955	ES1829955	ES1829955	ES1829955	202499	ES1829955	ES1829955
ChemName	output unit	EQL	CT1 General Soild Waste (NSW)	SCC1 / TCLP1 General Solid Waste	CT2 / TCLP2 Restricted Solid Waste (NSW)								

Statistical Summary						
Number of Results	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect	Number of Guideline Exceedances

Data Comments

#1 Pale brown sandy soil plus one piece of bonded asbestos cement sheeting approximately 12 x 9 x 2mm.
#2 A collection of crushed building debris.
#3 Pale brown sandy soil with slag debris.
#4 Grey rocky soil with organic matter.
#5 Pale brown sandy soil.
#6 Mid brown sandy soil.
#7 Mid grey sandy soil.
#8 Brown sandy soil.
#9 G.MORGAN
#10 C.OWLER
#11 E.DAOS
#12 No*
#13 Ch
#14 No

* Total concentration of scheduled chemicals to be <50mg/kg for CT1 and CT2
^ Total concentration of moderately harmful pesticides to be <250 mg/kg for CT1 and <1000 for CT2.
^^ Criteria included where leachate analysis was undertaken only.

ATTACHMENT D

Laboratory Certificates

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: Waterloo Station

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway St Leonards NSW	Purchase Order No:	
		Results Required Date:	5 day TAT
		Telephone:	0437 039 929
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

Fax:

Subcon / Forward Lab / Split WO
Lab / Analysis: ALS NC/Asbes, ALS Bns/Spa
Organised By / Date:
Relinquished By / Date:
Connote / Courier:
WO No:
Attached By PO / Internal Sheet:

Additional Report Formats

- ☐ NEPM
- ☐ CSV
- ☐ ESDAT
- ☐ DQO
- ☐ GO, Guidelines --------
- ☐ Others _____

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other____	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	EA200N (asbestos NEPM)	PFAS	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)	Notes/Guidelines/LOR/ Special instructions
1	SRT-BH420-0.5	6/10/2018	x			2			X	X		X	X	X						
2	SRT-BH420-1.0	6/10/2018	x			2			X											
3	SRT-BH420-2.0	6/10/2018	x			2		X	X											
4	SRT-BH420-3.0	6/10/2018	x			2	X										X			
5	SRT-BH420-1.0-1.45	6/10/2018	x			1	X													
6	SRT-BH420-2.5-2.95	6/10/2018	x			1	X													
7	SRT-BH420-4.0-4.45	6/10/2018	x			1											X			
8	SRT-BH420-5.5-5.95	6/10/2018	x			1											X			
9	SRT-BH420-7.0-7.45	6/10/2018	x			1	X													
10	SRT_BH408_0.2	6/10/2018	x			2			X					X						
11	SRT_BH408_0.5	6/10/2018	x			2			X	X	X	X	X							
12	SRT_BH408_1.0	6/10/2018	x			2														
13	SRT_BH408_1.5	6/10/2018	x			2					X									

Environmental Division
Sydney
Work Order Reference
ES1829955

Telephone : + 61-2-8784 8555

Relinquished By: Tegen Anning	Date/Time: 08/10/2018	Received By: FAO	Date/Time: 10/10/18 1pm
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10/10/2018)

ES1829955

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
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Smithfield NSW 2164 Australia
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F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: Waterloo Station

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 / Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate) Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	EA200N (asbestos NEPM)	PFAS	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)
14	SRT_BH408_2.0	6/10/2018	x			2		X	X										
15	SRT_BH408_3.0	6/10/2018	x			2					X						X		
16	SRT_BH409_0.1	6/10/2018	x			2	X												
17	SRT_BH409_0.5	6/10/2018	x			2			X	X	X	X	X	X					
18	SRT_BH409_1.0	6/10/2018	x			2	X												
19	SRT_BH409_1.5	6/10/2018	x			2			X										
20	SRT_BH409_2.0	6/10/2018	x			2		X			X								
21	SRT_BH409_3.0	6/10/2018	x			2			X								X		
22	SRT_BH409_4.0	6/10/2018	x			2	X										X		
23	SRT_BH410_0.2	6/10/2018	x			2			X					X					
24	SRT_BH410_0.8	6/10/2018	x			2			X	X		X	X						
25	SRT_BH410_1.0	6/10/2018	x			2													
26	SRT_BH410_1.5	6/10/2018	x			2			X		X								
27	SRT_BH410_2.0	6/10/2018	x			1	X												

ANALYSIS REQUESTED

Additional Report Formats

- ☐ NEPM
- ☐ CSV
- ☐ ESDAT
- ☐ DQO
- ☐ GO, Guidelines ——————
- ☐ Others _____

Notes/Guidelines/LOR/ Special instructions

Relinquished By: Tegen Anning	Date/Time: 08/10/2018	Received By: TADI	Date/Time: 10/10/18 1pm
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10/10/2018)

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: Waterloo Station

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate)			NO. OF CONTAINERS	ANALYSIS REQUESTED														Additional Report Formats / Notes/Guidelines/LOR/ Special Instructions
			Soil Sample	Water Sample	Other_____		HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	EA200N (asbestos NEPM)	PFAS	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)		
28	SRT_BH410_3.0	6/10/2018	x			2	X										X				
29	SRT_BH411_0.15	6/10/2018	x			2	X							X							
30	SRT_BH411_0.5	6/10/2018	x			2			X	X		X	X								
31	SRT_BH411_1.0	6/10/2018	x			2			X												
32	SRT_BH411_1.5	6/10/2018	x			2	X														
33	SRT_BH411_2.0	6/10/2018	x			2			X												
34	SRT_BH411_3.0	6/10/2018	x			2	X										X				
35	SRT_BH412_0.11	6/10/2018	x			2				X		X	X								
36	SRT_BH412_0.5	6/10/2018	x			2			X					X							
37	SRT_BH412_1.0	6/10/2018	x			2			X	X		X	X	X							
38	SRT_BH412_1.5	6/10/2018	x			1	X														
39	SRT_BH412_2.0	6/10/2018	x			2		X	X												
40	SRT_BH412_3.0	6/10/2018	x			2	X										X				

Additional Report Formats: ☐ NEPM ☐ CSV ☐ ESDAT ☐ DQO ☐ GO, Guidelines ------- ☐ Others _____

Relinquished By: Tegen Anning	Date/Time: 08/10/2018	Received By: TADi	Date/Time: 10/10/18 1pm
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10/10/2018)

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
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Lab ID Number: *(please quote on correspondence)*

Site: Waterloo Station

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	EA200N (asbestos NEPM)	PFAS	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)
41	SRT_BH416_0.25	7/10/2018	x			3			X		X			X					
42	SRT_BH416_0.5	7/10/2018	x			2			X	X		X	X						
43	SRT_BH416_1.0	7/10/2018	x			3					X			X					
44	SRT_BH416_1.5	7/10/2018	x			2			X										
45	SRT_BH416_2.0	7/10/2018	x			2	X												
46	SRT_BH416_3.0	7/10/2018	x			2			X		X						X		
47	SRT_BH417_0.2	7/10/2018	x			3	X												
48	SRT_BH417_0.5	7/10/2018	x			2			X	X	X	X	X	X					
49	SRT_BH417_1.5	7/10/2018	x			2			X			X	X						
50	SRT_BH417_2.0	7/10/2018	x			2		X			X								
51	SRT_BH417_3.0	7/10/2018	x			2			X		X						X		
52	SRT_BH421_0.25	6/10/2018	x			2				X				X					
53	SRT_BH421_0.5	6/10/2018	x			1 (jar)			X										

ANALYSIS REQUESTED

Additional Report Formats

- ☐ NEPM
- ☐ CSV
- ☐ ESDAT
- ☐ DQO
- ☐ GO, Guidelines _____
- ☐ Others _____

Notes/Guidelines/LOR/ Special instructions

Relinquished By: Tegen Anning	Date/Time: 08/10/2018	Received By: FAS	Date/Time: 10/10/18 1pm
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10/10/2018)

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
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Lab ID Number: *(please quote on correspondence)*

Site: Waterloo Station

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 / Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	EA200N (asbestos NEPM)	PFAS	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)
54	SRT_BH421_1.0	6/10/2018	x			2			X										
55	SRT_BH421_1.5	6/10/2018	x			2	X												
56	SRT_BH421_2.0	6/10/2018	x			2	X	X											
57	SRT_BH421_3.0	6/10/2018	x			2			X						X		X		
58	SRT_BH422_0.5	7/10/2018	x			2			X	X		X	X	X					
59	SRT_BH422_1.0	7/10/2018	x			3			X										
60	SRT_BH422_1.5	7/10/2018	x			2			X										
61	SRT_BH422_2.0	7/10/2018	x			2	X	X											
62	SRT_BH422_3.0	7/10/2018	x			2			X								X		
63	SRT_BH426_0.1	7/10/2018	x			3			X		X			X					
64	SRT_BH426_0.5	7/10/2018	x			2				X		X	X						
65	SRT_BH426_1.0	7/10/2018	x			3			X		X	X	X						
66	SRT_BH426_1.5	7/10/2018	x			2	X												

ANALYSIS REQUESTED

Additional Report Formats

- ☐ NEPM
- ☐ CSV
- ☐ ESDAT
- ☐ DQO
- ☐ GO, Guidelines --------
- ☐ Others _____

Notes/Guidelines/LOR/ Special instructions

Relinquished By: Tegen Anning	Date/Time: 08/10/2018	Received By: TADS	Date/Time: 10/10/18 4pm
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10/10/2018)

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
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Lab ID Number: *(please quote on correspondence)*

Site: Waterloo Station

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate)			NO. OF CONTAINERS	ANALYSIS REQUESTED													Additional Report Formats
			Soil Sample	Water Sample	Other____		HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	EA200N (asbestos NEPM)	PFAS	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)	☐ NEPM ☐ CSV ☐ ESDAT ☐ DQO ☐ GO, Guidelines -------- ☐ Others_____
67	SRT_BH426_2.0	7/10/2018	x			2		X	X											Notes/Guidelines/LOR/ Special instructions
68	SRT_BH426_3.0	7/10/2018	x			2	X	X												
69	SRT_BH426_4.0	7/10/2018	x			2			X								X			
70	SRT_BH426_5.0	7/10/2018	x			2	X										X			
71	RB100	6/10/2018		x		4			X	X	X	X	X							
72	RB103	7/10/2018		x		4			X	X	X	X	X							
73	QCA100	6/10/2018	x			1	X													
74	QCA101	6/10/2018	x			1			X	X	X	X	X	X						
75	QCA102	6/10/2018	x			1			X											
76	QCA103	7/10/2018	x			1			X											

Relinquished By: Tegen Anning	Date/Time: 08/10/2018	Received By: FAD;	Date/Time: 10/10/18 1pm
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10/10/2018)

17/10/18

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
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Lab ID Number: *(please quote on correspondence)*

Site: Waterloo Station

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

Subcon / Forward Lab / Split WO
Lab / Analysis: ALS NC | As Iso / ALSbris/Syd
Organised By / Date:
Relinquished By / Date:
Fax:
Connote / Courier:
WO No:
Attached By PO / Internal Sheet:

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate)			NO. OF CONTAINERS	ANALYSIS REQUESTED												
			Soil Sample	Water Sample	Other___		HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	EA200N (asbestos NEPM)	PFAS	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)
1	SRT-BH420-0.5	6/10/2018	x			2			X	X		X	X	X					
2	SRT-BH420-1.0	6/10/2018	x			2			X										
3	SRT-BH420-2.0	6/10/2018	x			2		X	X										
4	SRT-BH420-3.0	6/10/2018	x			2	X										X		
5	SRT-BH420-1.0-1.45	6/10/2018	x			1	X												
6	SRT-BH420-2.5-2.95	6/10/2018	x			1	X												
7	SRT-BH420-4.0-4.45	6/10/2018	x			1											X		
8	SRT-BH420-5.5-5.95	6/10/2018	x			1											X		
9	SRT-BH420-7.0-7.45	6/10/2018	x			1	X												
10	SRT_BH408_0.2	6/10/2018	x			2			X					X					
11	SRT_BH408_0.5	6/10/2018	x			2			X	X	X	X	X						
12	SRT_BH408_1.0	6/10/2018	x			2													
13	SRT_BH408_1.5	6/10/2018	x			2					X								

Additional Report Formats

- ☐ NEPM
- ☐ CSV
- ☐ ESDAT
- ☐ DQO
- ☐ GO, Guidelines _____
- ☐ Others _____

Notes/Guidelines/LOR/ Special instructions

Environmental Division
Sydney
Work Order Reference
ES1829955

Telephone : +61-2-8784 8555

Relinquished By: Tegen Anning	Date/Time: 08/10/2018	Received By: FADI	Date/Time: 10/10/18 1pm
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10/10/2018)

ES1829955

CHAIN OF CUSTODY & ANALYSIS REQUEST | Page 2 of 6

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: Waterloo Station

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 / Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Soil Sample)	Matrix (Water Sample)	Matrix (Other)	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	EA200N (asbestos NEPM)	PFAS	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)	Notes/Guidelines/LOR/ Special instructions
14	SRT_BH408_2.0	6/10/2018	x			2		X	X											
15	SRT_BH408_3.0	6/10/2018	x			2					X						X			
16	SRT_BH409_0.1	6/10/2018	x			2	X													
17	SRT_BH409_0.5	6/10/2018	x			2			X	X	X	X	X	X						
18	SRT_BH409_1.0	6/10/2018	x			2	X													
19	SRT_BH409_1.5	6/10/2018	x			2			X											
20	SRT_BH409_2.0	6/10/2018	x			2		X			X									
21	SRT_BH409_3.0	6/10/2018	x			2			X								X			
22	SRT_BH409_4.0	6/10/2018	x			2	X										X			
23	SRT_BH410_0.2	6/10/2018	x			2			X					X						
24	SRT_BH410_0.8	6/10/2018	x			2			X	X		X	X							
25	SRT_BH410_1.0	6/10/2018	x			2														
26	SRT_BH410_1.5	6/10/2018	x			2			X		X									
27	SRT_BH410_2.0	6/10/2018	x			1	X													

Additional Report Formats

- ☐ NEPM
- ☐ CSV
- ☐ ESDAT
- ☐ DQO
- ☐ GO, Guidelines -------
- ☐ Others _____

Relinquished By: Tegen Anning	Date/Time: 08/10/2018	Received By: TASI	Date/Time: 10/10/18 1pm
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10/10/2018)

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: Waterloo Station

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate) Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	EA200N (asbestos NEPM)	PFAS	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)	Notes/Guidelines/LOR/ Special instructions
28	SRT_BH410_3.0	6/10/2018	x			2	X										X			
29	SRT_BH411_0.15	6/10/2018	x			2	X							X						
30	SRT_BH411_0.5	6/10/2018	x			2			X	X		X	X							
31	SRT_BH411_1.0	6/10/2018	x			2			X											
32	SRT_BH411_1.5	6/10/2018	x			2	X													
33	SRT_BH411_2.0	6/10/2018	x			2			X											
34	SRT_BH411_3.0	6/10/2018	x			2	X										X			
35	SRT_BH412_0.11	6/10/2018	x			2				X		X	X							
36	SRT_BH412_0.5	6/10/2018	x			2			X					X						
37	SRT_BH412_1.0	6/10/2018	x			2			X	X		X	X	X						
38	SRT_BH412_1.5	6/10/2018	x			1	X													
39	SRT_BH412_2.0	6/10/2018	x			2		X	X											
40	SRT_BH412_3.0	6/10/2018	x			2	X										X			

Additional Report Formats

- ☐ NEPM
- ☐ CSV
- ☐ ESDAT
- ☐ DQO
- ☐ GO, Guidelines ——————
- ☐ Others _____

Relinquished By: Tegen Anning	Date/Time: 08/10/2018	Received By: TAD;	Date/Time: 10/10/18 1pm
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10/10/2018)

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: Waterloo Station

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate)			NO. OF CONTAINERS	ANALYSIS REQUESTED													Additional Report Formats / Notes/Guidelines/LOR/ Special instructions
			Soil Sample	Water Sample	Other____		HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	EA200N (asbestos NEPM)	PFAS	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)	
41	SRT_BH416_0.25	7/10/2018	x			3			X		X			X						
42	SRT_BH416_0.5	7/10/2018	x			2			X	X		X	X							
43	SRT_BH416_1.0	7/10/2018	x			3					X			X						
44	SRT_BH416_1.5	7/10/2018	x			2			X											
45	SRT_BH416_2.0	7/10/2018	x			2	X													
46	SRT_BH416_3.0	7/10/2018	x			2			X		X						X			
47	SRT_BH417_0.2	7/10/2018	x			3	X													
48	SRT_BH417_0.5	7/10/2018	x			2			X	X	X	X	X	X						
49	SRT_BH417_1.5	7/10/2018	x			2			X			X	X							
50	SRT_BH417_2.0	7/10/2018	x			2		X			X									
51	SRT_BH417_3.0	7/10/2018	x			2			X		X						X			
52	SRT_BH421_0.25	6/10/2018	x			2				X				X						
53	SRT_BH421_0.5	6/10/2018	x			1 (jar)			X											

Additional Report Formats: ☐ NEPM ☐ CSV ☐ ESDAT ☐ DQO ☐ GO, Guidelines -------- ☐ Others _____

Relinquished By: Tegen Anning	Date/Time: 08/10/2018	Received By: FAS;	Date/Time: 10/10/18
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10/10/2018)

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: Waterloo Station

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate) Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	EA200N (asbestos NEPM)	PFAS	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)
54	SRT_BH421_1.0	6/10/2018	x			2			X										
55	SRT_BH421_1.5	6/10/2018	x			2	X												
56	SRT_BH421_2.0	6/10/2018	x			2	X	X											
57	SRT_BH421_3.0	6/10/2018	x			2			X						X		X		
58	SRT_BH422_0.5	7/10/2018	x			2			X	X		X	X	X					
59	SRT_BH422_1.0	7/10/2018	x			3			X										
60	SRT_BH422_1.5	7/10/2018	x			2			X										
61	SRT_BH422_2.0	7/10/2018	x			2	X	X											
62	SRT_BH422_3.0	7/10/2018	x			2			X								X		
63	SRT_BH426_0.1	7/10/2018	x			3			X		X			X					
64	SRT_BH426_0.5	7/10/2018	x			2				X		X	X						
65	SRT_BH426_1.0	7/10/2018	x			3			X		X	X	X						
66	SRT_BH426_1.5	7/10/2018	x			2	X												

Additional Report Formats

- ☐ NEPM
- ☐ CSV
- ☐ ESDAT
- ☐ DQO
- ☐ GO, Guidelines --------
- ☐ Others _____

Notes/Guidelines/LOR/ Special instructions

Relinquished By: Tegen Anning	Date/Time: 08/10/2018	Received By: TADI	Date/Time: 10/10/18 4pm
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10/10/2018)

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: Waterloo Station

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate)			NO. OF CONTAINERS	ANALYSIS REQUESTED													Additional Report Formats
			Soil Sample	Water Sample	Other____		HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	EA200N (asbestos NEPM)	PFAS	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)	☐ NEPM ☐ CSV ☐ ESDAT ☐ DQO ☐ GO, Guidelines ------ ☐ Others_____ **Notes/Guidelines/LOR/ Special instructions**
67	SRT_BH426_2.0	7/10/2018	x			2		X	X											
68	SRT_BH426_3.0	7/10/2018	x			2	X	X												
69	SRT_BH426_4.0	7/10/2018	x			2			X								X			
70	SRT_BH426_5.0	7/10/2018	x			2	X										X			
71	RB100	6/10/2018		x		4			X	X	X	X	X							
72	RB103	7/10/2018		x		4			X	X	X	X	X							
73	QCA100	6/10/2018	x			1	X													
74	QCA101	6/10/2018	x			1			X	X	X	X	X	X						
75	QCA102	6/10/2018	x			1			X											
76	QCA103	7/10/2018	x			1			X											
77	TRIP SPIKE 8	2/10/18	x																	
78	TRIP SPICE TS100	2/10/18																		
79	TRIP BLANK	5/10/18																		

Relinquished By: Tegen Anning	Date/Time: 08/10/2018	Received By: FADI	Date/Time: 10/10/18 1pm
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10/10/2018)

80 TRIP BLANK TB100 5/10/18 x 1
81 BH414_0.14 7/10/18 x 3
82 SRT_BH418_3.0 7/10/18 x 1
83 TRIP CONTROL SPIKE 2/10/18 x 1

Fadi Soro

From: Sepan Mahamad
Sent: Wednesday, 10 October 2018 12:42 PM
To: Fadi Soro; Saman Taeidi
Subject: FW: COC01
Attachments: 1791865_COC_Primary Lab_Soil_COC01.pdf

Hi gents,

Please see attached CoC for Golder samples received in Smithfield on Monday.

Please note that my office hours are 11am - 5.30pm Monday to Friday. For assistance outside of this time please contact **ALSEnviro.Sydney@alsglobal.com**.

Kind Regards,

Sepan Mahamad

Client Services Officer, Environmental
Sydney

T +61 2 9437 9978
M +61 438 511 003
sepan.mahamad@alsglobal.com
Shop 2, 36 Hume St
Crows Nest NSW 2065 AUSTRALIA

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From: Houston, Barry [mailto:bhouston@golder.com.au]

GOLDER

Sent: Wednesday, 10 October 2018 12:35
To: ALSEnviro Sydney <ALSEnviro.Sydney@ALSGlobal.com>
Cc: Sepan Mahamad <Sepan.Mahamad@alsglobal.com>; Brenda Hong <Brenda.Hong@alsglobal.com>; Anning, Tegen <TAnning@golder.com.au>; Bonetti, Rita <RBonetti@golder.com.au>
Subject: COC01

Hi

Please find attached a coc for samples which were sent to the lab on Monday

Please let us know if there are any issues,

Kind regards
Barry

Barry Houston (BSc. MSc.)
Senior Environmental Scientist

124 Pacific Highway, St. Leonards, New South Wales 2065, Australia (PO Box 1302, Crows Nest NSW 1585)
T: +61 2 9478 3900 | **D:** +61 2 9478 3945 | **M:** +61 416 826 175 | **golder.com**
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ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1829955**	Page	: 1 of 96
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: SYDNEY METRO	Date Samples Received	: 10-Oct-2018 13:00
Order number	: .	Date Analysis Commenced	: 11-Oct-2018
C-O-C number	: ----	Issue Date	: 17-Oct-2018 17:57
Sampler	: ----		
Site	: Waterloo Station		
Quote number	: SY/698/17 C V4		
No. of samples received	: 84		
No. of samples analysed	: 64		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive 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*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini		Sydney Organics, Smithfield, NSW
Gerrad Morgan	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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.

- EG005: Poor precision was obtained for Copper on sample ES1829955-1. Results have been confirmed by re-extraction and reanalysis.
- EG005: Poor spike recovery was obtained for Zinc on sample ES1829955-1. Results have been confirmed by re-extraction and reanalysis.
- EG005: Poor precision was obtained for Lead and Zinc on sample ES1829955-60. Results have been confirmed by re-extraction and reanalysis.
- EP066 : Positive PCB result is confirmed by re-extraction and re-analysis.
- EP068: Positive results have been confirmed by re-extraction and re-analysis.
- EP071: Results of sample QCA102 have been confirmed by re-extraction and re-analysis.
- EG035: Positive Hg result for ES1829955 #2 has been confirmed by reanalysis.
- ASS: EA029 (SPOCAS): Retained Acidity not required because pH KCl greater than or equal to 4.5
- EP080: The trip spike and its control have been analysed for volatile TPH and BTEX only. The trip spike and control were prepared in the lab using reagent grade sand spiked with petrol. The spike was dispatched from the lab and the control retained.
- EA200N: Asbestos weights and percentages are not covered under the Scope of NATA Accreditation.
  Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present)
  The Asbestos (Fines and Fibrous) weight is calculated from the extracted Fibrous Asbestos and Asbestos Fines as an equivalent weight of 100% Asbestos
  Percentages for Asbestos content in ACM are based on the 2013 NEPM default values.
  All calculations of percentage Asbestos under this method are approximate and should be used as a guide only.
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime ($CaCO_3$) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m3 in-situ soil, multiply reported results x wet bulk density of soil in t/m3.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.
- EA200N: ALS laboratory procedures and methods used for the identification and quantitation of asbestos are consistent with AS4964-2004 and the requirements of the 2013 NEPM for Assessment of Site Contamination

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH420-0.5	SRT-BH420-1.0	SRT-BH420-2.0	SRT-BH420-3.0	SRT-BH420-4.0-4.45
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-001	ES1829955-002	ES1829955-003	ES1829955-004	ES1829955-007
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	----	----	----	**6.8**	**6.0**
pH OX (23B)	----	0.1	pH Unit	----	----	----	**6.7**	**5.1**
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	----	----	<2	<2
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	----	----	<2	**65**
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	----	----	<2	**65**
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	----	----	<0.020	<0.020
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	----	----	<0.020	**0.104**
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	----	----	<0.020	**0.104**
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	----	----	<0.020	<0.020
Peroxide Sulfur (23De)	----	0.020	% S	----	----	----	<0.020	<0.020
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	----	----	<0.020	<0.020
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	----	----	<10	<10
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	----	----	**0.072**	<0.020
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	----	----	**0.086**	<0.020
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	----	----	<0.020	<0.020
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	----	----	<10	<10
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	----	----	<0.020	<0.020
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	----	----	<0.020	<0.020
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	----	----	<0.020	<0.020
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	----	----	<0.020	<0.020
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	----	----	<10	<10
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	----	----	<0.020	<0.020
EA029-F: Excess Acid Neutralising Capacity								
Excess Acid Neutralising Capacity (23Q)	----	0.020	% CaCO3	----	----	----	**0.634**	----
acidity - Excess Acid Neutralising Capacity (a-23Q)	----	10	mole H+ / t	----	----	----	**127**	----
sulfidic - Excess Acid Neutralising Capacity (s-23Q)	----	0.020	% S	----	----	----	**0.203**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH420-0.5	SRT-BH420-1.0	SRT-BH420-2.0	SRT-BH420-3.0	SRT-BH420-4.0-4.45
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-001	ES1829955-002	ES1829955-003	ES1829955-004	ES1829955-007
				Result	Result	Result	Result	Result
EA029-F: Excess Acid Neutralising Capacity - Continued								
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	----	----	**1.5**	**1.5**
Net Acidity (sulfur units)	----	0.02	% S	----	----	----	<0.02	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	----	<10	<10
Liming Rate	----	1	kg CaCO3/t	----	----	----	<1	<1
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	----	----	<0.02	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	----	----	<10	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	----	----	<1	<1
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**11.0**	**12.9**	**5.4**	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No***	----	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	**No**	----	----	----	----
Asbestos Type	1332-21-4	-	--	**Ch**	----	----	----	----
Sample weight (dry)	----	0.01	g	**1090**	----	----	----	----
APPROVED IDENTIFIER:	----	-	--	**C.OWLER**	----	----	----	----
EA200N: Asbestos Quantification (non-NATA)								
ø **Asbestos (Fines and Fibrous <7mm)**	1332-21-4	0.0004	g	<0.0004	----	----	----	----
ø **Asbestos (Fines and Fibrous FA+AF)**	----	0.001	% (w/w)	<0.001	----	----	----	----
ø **Asbestos Containing Material**	1332-21-4	0.1	g	**0.7**	----	----	----	----
ø **Asbestos Containing Material (as 15% Asbestos in ACM >7mm)**	1332-21-4	0.01	% (w/w)	<0.01	----	----	----	----
ø **Weight Used for % Calculation**	----	0.0001	kg	**1.09**	----	----	----	----
ø **Fibrous Asbestos >7mm**	----	0.0004	g	<0.0004	----	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**11**	**9**	<5	----	----
Cadmium	7440-43-9	1	mg/kg	**2**	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	**9**	**12**	<2	----	----
Copper	7440-50-8	5	mg/kg	**76**	**78**	<5	----	----
Lead	7439-92-1	5	mg/kg	**618**	**628**	**15**	----	----
Nickel	7440-02-0	2	mg/kg	**8**	**10**	<2	----	----
Zinc	7440-66-6	5	mg/kg	**804**	**481**	**17**	----	----
EG035T: Total Recoverable Mercury by FIMS								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH420-0.5	SRT-BH420-1.0	SRT-BH420-2.0	SRT-BH420-3.0	SRT-BH420-4.0-4.45
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-001	ES1829955-002	ES1829955-003	ES1829955-004	ES1829955-007
				Result	Result	Result	Result	Result
EG035T: Total Recoverable Mercury by FIMS - Continued								
Mercury	7439-97-6	0.1	mg/kg	**0.6**	**5.8**	<0.1	----	----
EP035G: Total Phenol by Discrete Analyser								
Phenols (Total)	----	1	mg/kg	<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	----	----	----	----
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	----	----	----	----
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	72-54-8/72-55-9/50-29-3	0.05	mg/kg	<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH420-0.5	SRT-BH420-1.0	SRT-BH420-2.0	SRT-BH420-3.0	SRT-BH420-4.0-4.45
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-001	ES1829955-002	ES1829955-003	ES1829955-004	ES1829955-007
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		**0.5**	**0.8**	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		**1.3**	**0.9**	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg		**1.4**	**0.9**	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		**0.6**	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg		**0.6**	<0.5	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		**0.8**	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		**0.8**	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH420-0.5	SRT-BH420-1.0	SRT-BH420-2.0	SRT-BH420-3.0	SRT-BH420-4.0-4.45
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-001	ES1829955-002	ES1829955-003	ES1829955-004	ES1829955-007
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		**6.0**	**2.6**	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		**0.9**	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**1.2**	**0.6**	**0.6**	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.6**	**1.2**	**1.2**	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**93.6**	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**102**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH420-0.5	SRT-BH420-1.0	SRT-BH420-2.0	SRT-BH420-3.0	SRT-BH420-4.0-4.45
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-001	ES1829955-002	ES1829955-003	ES1829955-004	ES1829955-007
					Result	Result	Result	Result	Result
EP068T: Organophosphorus Pesticide Surrogate - Continued									
DEF	78-48-8	0.05	%		69.9	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		75.6	79.1	78.4	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		78.4	82.1	83.1	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		55.4	73.3	63.7	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		83.4	87.2	86.4	----	----
Anthracene-d10	1719-06-8	0.5	%		87.5	89.9	90.1	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		78.7	80.4	83.4	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		95.0	90.7	100	----	----
Toluene-D8	2037-26-5	0.2	%		89.9	82.2	102	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		92.7	78.8	100	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH420-5.5-5.95	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-008	ES1829955-010	ES1829955-011	ES1829955-013	ES1829955-014
					Result	Result	Result	Result	Result
EA029-A: pH Measurements									
pH KCl (23A)	----	0.1	pH Unit		**4.8**	----	----	----	----
pH OX (23B)	----	0.1	pH Unit		**4.9**	----	----	----	----
EA029-B: Acidity Trail									
Titratable Actual Acidity (23F)	----	2	mole H+ / t		**25**	----	----	----	----
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t		**80**	----	----	----	----
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t		**55**	----	----	----	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S		**0.040**	----	----	----	----
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S		**0.129**	----	----	----	----
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S		**0.089**	----	----	----	----
EA029-C: Sulfur Trail									
KCl Extractable Sulfur (23Ce)	----	0.020	% S		<0.020	----	----	----	----
Peroxide Sulfur (23De)	----	0.020	% S		<0.020	----	----	----	----
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S		<0.020	----	----	----	----
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t		<10	----	----	----	----
EA029-D: Calcium Values									
KCl Extractable Calcium (23Vh)	----	0.020	% Ca		<0.020	----	----	----	----
Peroxide Calcium (23Wh)	----	0.020	% Ca		**0.027**	----	----	----	----
Acid Reacted Calcium (23X)	----	0.020	% Ca		**0.027**	----	----	----	----
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t		**14**	----	----	----	----
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S		**0.022**	----	----	----	----
EA029-E: Magnesium Values									
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg		<0.020	----	----	----	----
Peroxide Magnesium (23Tm)	----	0.020	% Mg		<0.020	----	----	----	----
Acid Reacted Magnesium (23U)	----	0.020	% Mg		<0.020	----	----	----	----
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t		<10	----	----	----	----
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S		<0.020	----	----	----	----
EA029-H: Acid Base Accounting									
ANC Fineness Factor	----	0.5	-		**1.5**	----	----	----	----
Net Acidity (sulfur units)	----	0.02	% S		**0.04**	----	----	----	----
Net Acidity (acidity units)	----	10	mole H+ / t		**25**	----	----	----	----
Liming Rate	----	1	kg CaCO3/t		**2**	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH420-5.5-5.95	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-008	ES1829955-010	ES1829955-011	ES1829955-013	ES1829955-014
				Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued								
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	**0.04**	----	----	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	**25**	----	----	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	**2**	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	----	----	**4.2**	----
Moisture Content	----	1.0	%	----	**9.7**	**2.2**	----	**4.8**
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	**No**	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	----	**No**	----	----	----
Asbestos Type	1332-21-4	-	--	----	**-**	----	----	----
Sample weight (dry)	----	0.01	g	----	**488**	----	----	----
APPROVED IDENTIFIER:	----	-	--	----	**C.OWLER**	----	----	----
EA200N: Asbestos Quantification (non-NATA)								
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	----	<0.0004	----	----	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	----	<0.001	----	----	----
ø Asbestos Containing Material	1332-21-4	0.1	g	----	<0.1	----	----	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)	----	<0.01	----	----	----
ø Weight Used for % Calculation	----	0.0001	kg	----	**0.488**	----	----	----
ø Fibrous Asbestos >7mm	----	0.0004	g	----	<0.0004	----	----	----
EG005T: Total Metals by ICP-AES								
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	----	<2	<2	----	<2
Copper	7440-50-8	5	mg/kg	----	**6**	<5	----	<5
Lead	7439-92-1	5	mg/kg	----	**55**	<5	----	<5
Nickel	7440-02-0	2	mg/kg	----	<2	<2	----	<2
Zinc	7440-66-6	5	mg/kg	----	**73**	<5	----	<5
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	<0.1	----	<0.1
EP035G: Total Phenol by Discrete Analyser								
Phenols (Total)	----	1	mg/kg	----	----	<1	----	----
EP066: Polychlorinated Biphenyls (PCB)								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH420-5.5-5.95	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-008	ES1829955-010	ES1829955-011	ES1829955-013	ES1829955-014
					Result	Result	Result	Result	Result
EP066: Polychlorinated Biphenyls (PCB) - Continued									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	----	<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	----	----
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	72-54-8/72-55-9/50-2	0.05	mg/kg		----	----	<0.05	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg		----	----	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg		----	----	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	<0.05	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH420-5.5-5.95	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-008	ES1829955-010	ES1829955-011	ES1829955-013	ES1829955-014
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg		----	----	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg		----	----	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg		----	----	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg		----	----	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg		----	----	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg		----	----	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	<0.05	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		----	----	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		----	----	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		----	----	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	----	<0.5	<0.5	----
Styrene	100-42-5	0.5	mg/kg		----	----	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		----	----	<0.5	<0.5	----
Isopropylbenzene	98-82-8	0.5	mg/kg		----	----	<0.5	<0.5	----
n-Propylbenzene	103-65-1	0.5	mg/kg		----	----	<0.5	<0.5	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		----	----	<0.5	<0.5	----
sec-Butylbenzene	135-98-8	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		----	----	<0.5	<0.5	----
tert-Butylbenzene	98-06-6	0.5	mg/kg		----	----	<0.5	<0.5	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg		----	----	<0.5	<0.5	----
n-Butylbenzene	104-51-8	0.5	mg/kg		----	----	<0.5	<0.5	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		----	----	<5	<5	----
2-Butanone (MEK)	78-93-3	5	mg/kg		----	----	<5	<5	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		----	----	<5	<5	----
2-Hexanone (MBK)	591-78-6	5	mg/kg		----	----	<5	<5	----
EP074C: Sulfonated Compounds									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH420-5.5-5.95	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-008	ES1829955-010	ES1829955-011	ES1829955-013	ES1829955-014
					Result	Result	Result	Result	Result
EP074C: Sulfonated Compounds - Continued									
Carbon disulfide	75-15-0	0.5	mg/kg		----	----	<0.5	<0.5	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		----	----	<0.5	<0.5	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		----	----	<0.5	<0.5	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		----	----	<0.5	<0.5	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		----	----	<5	<5	----
Chloromethane	74-87-3	5	mg/kg		----	----	<5	<5	----
Vinyl chloride	75-01-4	5	mg/kg		----	----	<5	<5	----
Bromomethane	74-83-9	5	mg/kg		----	----	<5	<5	----
Chloroethane	75-00-3	5	mg/kg		----	----	<5	<5	----
Trichlorofluoromethane	75-69-4	5	mg/kg		----	----	<5	<5	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		----	----	<0.5	<0.5	----
Iodomethane	74-88-4	0.5	mg/kg		----	----	<0.5	<0.5	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		----	----	<0.5	<0.5	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		----	----	<0.5	<0.5	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		----	----	<0.5	<0.5	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		----	----	<0.5	<0.5	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		----	----	<0.5	<0.5	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		----	----	<0.5	<0.5	----
Trichloroethene	79-01-6	0.5	mg/kg		----	----	<0.5	<0.5	----
Dibromomethane	74-95-3	0.5	mg/kg		----	----	<0.5	<0.5	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		----	----	<0.5	<0.5	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		----	----	<0.5	<0.5	----
Tetrachloroethene	127-18-4	0.5	mg/kg		----	----	<0.5	<0.5	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		----	----	<0.5	<0.5	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		----	----	<0.5	<0.5	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		----	----	<0.5	<0.5	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		----	----	<0.5	<0.5	----
Pentachloroethane	76-01-7	0.5	mg/kg		----	----	<0.5	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH420-5.5-5.95	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-008	ES1829955-010	ES1829955-011	ES1829955-013	ES1829955-014
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		----	----	<0.5	<0.5	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		----	----	<0.5	<0.5	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		----	----	<0.5	<0.5	----
Bromobenzene	108-86-1	0.5	mg/kg		----	----	<0.5	<0.5	----
2-Chlorotoluene	95-49-8	0.5	mg/kg		----	----	<0.5	<0.5	----
4-Chlorotoluene	106-43-4	0.5	mg/kg		----	----	<0.5	<0.5	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		----	----	<0.5	<0.5	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		----	----	<0.5	<0.5	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		----	----	<0.5	<0.5	----
Bromodichloromethane	75-27-4	0.5	mg/kg		----	----	<0.5	<0.5	----
Dibromochloromethane	124-48-1	0.5	mg/kg		----	----	<0.5	<0.5	----
Bromoform	75-25-2	0.5	mg/kg		----	----	<0.5	<0.5	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		----	----	<1	<1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH420-5.5-5.95	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-008	ES1829955-010	ES1829955-011	ES1829955-013	ES1829955-014
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**0.6**	**0.6**	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**1.2**	**1.2**	----	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	<10	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg		----	<50	<50	----	<50
C15 - C28 Fraction	----	100	mg/kg		----	<100	<100	----	<100
C29 - C36 Fraction	----	100	mg/kg		----	<100	<100	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	<50	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	<10	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	<10	----	<10
>C10 - C16 Fraction	----	50	mg/kg		----	<50	<50	----	<50
>C16 - C34 Fraction	----	100	mg/kg		----	<100	<100	----	<100
>C34 - C40 Fraction	----	100	mg/kg		----	<100	<100	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	<50	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	<50	----	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg		----	<0.2	<0.2	----	<0.2
^ Total Xylenes	----	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Naphthalene	91-20-3	1	mg/kg		----	<1	<1	----	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	**127**	----	----
EP068S: Organochlorine Pesticide Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH420-5.5-5.95	SRT_BH408_0.2	SRT_BH408_0.5	SRT_BH408_1.5	SRT_BH408_2.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-008	ES1829955-010	ES1829955-011	ES1829955-013	ES1829955-014
					Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate - Continued									
Dibromo-DDE	21655-73-2	0.05	%		----	----	125	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	81.0	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		----	----	82.6	97.4	----
Toluene-D8	2037-26-5	0.5	%		----	----	84.9	106	----
4-Bromofluorobenzene	460-00-4	0.5	%		----	----	81.5	99.2	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	81.6	75.4	----	79.8
2-Chlorophenol-D4	93951-73-6	0.5	%		----	84.4	79.0	----	83.3
2.4.6-Tribromophenol	118-79-6	0.5	%		----	73.2	60.0	----	67.3
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	88.7	82.8	----	87.3
Anthracene-d10	1719-06-8	0.5	%		----	93.2	88.5	----	104
4-Terphenyl-d14	1718-51-0	0.5	%		----	82.7	79.5	----	96.0
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	91.4	92.6	----	105
Toluene-D8	2037-26-5	0.2	%		----	87.1	97.4	----	107
4-Bromofluorobenzene	460-00-4	0.2	%		----	90.4	85.0	----	104

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH408_3.0	SRT_BH409_0.5	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-015	ES1829955-017	ES1829955-019	ES1829955-020	ES1829955-021
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	**5.8**	----	----	----	**5.1**
pH OX (23B)	----	0.1	pH Unit	**4.6**	----	----	----	**4.6**
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	**2**	----	----	----	**11**
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	**77**	----	----	----	**76**
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	**75**	----	----	----	**64**
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	<0.020	----	----	----	<0.020
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	**0.123**	----	----	----	**0.122**
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	**0.120**	----	----	----	**0.103**
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	<0.020	----	----	----	<0.020
Peroxide Sulfur (23De)	----	0.020	% S	<0.020	----	----	----	<0.020
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	<0.020	----	----	----	<0.020
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	----	----	----	<10
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	<0.020	----	----	----	<0.020
Peroxide Calcium (23Wh)	----	0.020	% Ca	<0.020	----	----	----	<0.020
Acid Reacted Calcium (23X)	----	0.020	% Ca	<0.020	----	----	----	<0.020
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	----	----	----	<10
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	<0.020	----	----	----	<0.020
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	<0.020	----	----	----	<0.020
Peroxide Magnesium (23Tm)	----	0.020	% Mg	<0.020	----	----	----	<0.020
Acid Reacted Magnesium (23U)	----	0.020	% Mg	<0.020	----	----	----	<0.020
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	----	----	----	<10
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	<0.020	----	----	----	<0.020
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	**1.5**	----	----	----	**1.5**
Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	----	----	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	----	----	**11**
Liming Rate	----	1	kg CaCO3/t	<1	----	----	----	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH408_3.0	SRT_BH409_0.5	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-015	ES1829955-017	ES1829955-019	ES1829955-020	ES1829955-021
					Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued									
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		<0.02	----	----	----	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		<10	----	----	----	**11**
Liming Rate excluding ANC	----	1	kg CaCO3/t		<1	----	----	----	<1
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**3.3**	----	----	**4.2**	----
Moisture Content	----	1.0	%		----	**4.4**	**4.8**	----	**31.1**
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		----	**No**	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres		----	**No**	----	----	----
Asbestos Type	1332-21-4	-	--		----	**-**	----	----	----
Sample weight (dry)	----	0.01	g		----	**394**	----	----	----
APPROVED IDENTIFIER:	----	-	--		----	**C.OWLER**	----	----	----
EA200N: Asbestos Quantification (non-NATA)									
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g		----	<0.0004	----	----	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		----	<0.001	----	----	----
ø Asbestos Containing Material	1332-21-4	0.1	g		----	<0.1	----	----	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)		----	<0.01	----	----	----
ø Weight Used for % Calculation	----	0.0001	kg		----	**0.394**	----	----	----
ø Fibrous Asbestos >7mm	----	0.0004	g		----	<0.0004	----	----	----
EG005T: Total Metals by ICP-AES									
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		----	<2	<2	----	<2
Copper	7440-50-8	5	mg/kg		----	<5	<5	----	<5
Lead	7439-92-1	5	mg/kg		----	<5	<5	----	<5
Nickel	7440-02-0	2	mg/kg		----	<2	<2	----	<2
Zinc	7440-66-6	5	mg/kg		----	<5	**6**	----	<5
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		----	<0.1	<0.1	----	<0.1
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	1	mg/kg		----	<1	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH408_3.0	SRT_BH409_0.5	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-015	ES1829955-017	ES1829955-019	ES1829955-020	ES1829955-021
				Result	Result	Result	Result	Result
EP066: Polychlorinated Biphenyls (PCB) - Continued								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<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	----	----	----
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	72-54-8/72-55-9/50-29-3	0.05	mg/kg	----	<0.05	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	<0.05	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	----	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg	----	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	<0.05	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH408_3.0	SRT_BH409_0.5	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-015	ES1829955-017	ES1829955-019	ES1829955-020	ES1829955-021
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Parathion-methyl	298-00-0	0.2	mg/kg		----	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg		----	<0.05	----	----	----
Fenthion	55-38-9	0.05	mg/kg		----	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg		----	<0.2	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		----	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg		----	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		----	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	<0.05	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Styrene	100-42-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Isopropylbenzene	98-82-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
n-Propylbenzene	103-65-1	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
sec-Butylbenzene	135-98-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
tert-Butylbenzene	98-06-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
n-Butylbenzene	104-51-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		<5	<5	----	<5	----
2-Butanone (MEK)	78-93-3	5	mg/kg		<5	<5	----	<5	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		<5	<5	----	<5	----
2-Hexanone (MBK)	591-78-6	5	mg/kg		<5	<5	----	<5	----
EP074C: Sulfonated Compounds									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH408_3.0	SRT_BH409_0.5	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-015	ES1829955-017	ES1829955-019	ES1829955-020	ES1829955-021
					Result	Result	Result	Result	Result
EP074C: Sulfonated Compounds - Continued									
Carbon disulfide	75-15-0	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		<5	<5	----	<5	----
Chloromethane	74-87-3	5	mg/kg		<5	<5	----	<5	----
Vinyl chloride	75-01-4	5	mg/kg		<5	<5	----	<5	----
Bromomethane	74-83-9	5	mg/kg		<5	<5	----	<5	----
Chloroethane	75-00-3	5	mg/kg		<5	<5	----	<5	----
Trichlorofluoromethane	75-69-4	5	mg/kg		<5	<5	----	<5	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Iodomethane	74-88-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Trichloroethene	79-01-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Dibromomethane	74-95-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Tetrachloroethene	127-18-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Pentachloroethane	76-01-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH408_3.0	SRT_BH409_0.5	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-015	ES1829955-017	ES1829955-019	ES1829955-020	ES1829955-021
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Bromobenzene	108-86-1	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
2-Chlorotoluene	95-49-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
4-Chlorotoluene	106-43-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Bromodichloromethane	75-27-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Dibromochloromethane	124-48-1	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Bromoform	75-25-2	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	<1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH408_3.0	SRT_BH409_0.5	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-015	ES1829955-017	ES1829955-019	ES1829955-020	ES1829955-021
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**0.6**	**0.6**	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**1.2**	**1.2**	----	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	<10	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg		----	<50	<50	----	<50
C15 - C28 Fraction	----	100	mg/kg		----	<100	<100	----	<100
C29 - C36 Fraction	----	100	mg/kg		----	<100	<100	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	<50	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	<10	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	<10	----	<10
>C10 - C16 Fraction	----	50	mg/kg		----	<50	<50	----	<50
>C16 - C34 Fraction	----	100	mg/kg		----	<100	<100	----	<100
>C34 - C40 Fraction	----	100	mg/kg		----	<100	<100	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	<50	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	<50	----	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg		----	<0.2	<0.2	----	<0.2
^ Total Xylenes	----	0.5	mg/kg		----	<0.5	<0.5	----	<0.5
Naphthalene	91-20-3	1	mg/kg		----	<1	<1	----	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	**122**	----	----	----
EP068S: Organochlorine Pesticide Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH408_3.0	SRT_BH409_0.5	SRT_BH409_1.5	SRT_BH409_2.0	SRT_BH409_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-015	ES1829955-017	ES1829955-019	ES1829955-020	ES1829955-021
					Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate - Continued									
Dibromo-DDE	21655-73-2	0.05	%		----	96.9	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	84.4	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		92.7	93.3	----	98.6	----
Toluene-D8	2037-26-5	0.5	%		98.6	105	----	105	----
4-Bromofluorobenzene	460-00-4	0.5	%		95.0	96.4	----	99.1	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	77.5	82.4	----	77.1
2-Chlorophenol-D4	93951-73-6	0.5	%		----	80.9	86.2	----	79.8
2.4.6-Tribromophenol	118-79-6	0.5	%		----	57.3	66.3	----	61.5
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	85.6	90.1	----	84.0
Anthracene-d10	1719-06-8	0.5	%		----	90.5	94.4	----	87.9
4-Terphenyl-d14	1718-51-0	0.5	%		----	81.9	84.2	----	79.0
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	105	106	----	88.4
Toluene-D8	2037-26-5	0.2	%		----	121	111	----	86.9
4-Bromofluorobenzene	460-00-4	0.2	%		----	108	109	----	90.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH409_4.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH410_3.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-022	ES1829955-023	ES1829955-024	ES1829955-026	ES1829955-028
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	**5.8**	----	----	----	**5.9**
pH OX (23B)	----	0.1	pH Unit	**5.1**	----	----	----	**4.5**
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	**5**	----	----	----	**6**
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	**66**	----	----	----	**79**
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	**62**	----	----	----	**74**
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	<0.020	----	----	----	<0.020
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	**0.107**	----	----	----	**0.127**
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	**0.099**	----	----	----	**0.118**
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	<0.020	----	----	----	<0.020
Peroxide Sulfur (23De)	----	0.020	% S	<0.020	----	----	----	<0.020
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	<0.020	----	----	----	<0.020
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	----	----	----	<10
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	<0.020	----	----	----	**0.027**
Peroxide Calcium (23Wh)	----	0.020	% Ca	<0.020	----	----	----	**0.030**
Acid Reacted Calcium (23X)	----	0.020	% Ca	<0.020	----	----	----	<0.020
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	----	----	----	<10
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	<0.020	----	----	----	<0.020
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	<0.020	----	----	----	<0.020
Peroxide Magnesium (23Tm)	----	0.020	% Mg	<0.020	----	----	----	<0.020
Acid Reacted Magnesium (23U)	----	0.020	% Mg	<0.020	----	----	----	<0.020
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	----	----	----	<10
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	<0.020	----	----	----	<0.020
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	**1.5**	----	----	----	**1.5**
Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	----	----	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	----	----	<10
Liming Rate	----	1	kg CaCO3/t	<1	----	----	----	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH409_4.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH410_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-022	ES1829955-023	ES1829955-024	ES1829955-026	ES1829955-028
					Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued									
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		<0.02	----	----	----	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		<10	----	----	----	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t		<1	----	----	----	<1
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		----	8.7	5.6	6.8	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		----	No	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres		----	No	----	----	----
Asbestos Type	1332-21-4	-	--		----	-	----	----	----
Sample weight (dry)	----	0.01	g		----	541	----	----	----
APPROVED IDENTIFIER:	----	-	--		----	G.MORGAN	----	----	----
EA200N: Asbestos Quantification (non-NATA)									
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g		----	<0.0004	----	----	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		----	<0.001	----	----	----
ø Asbestos Containing Material	1332-21-4	0.1	g		----	<0.1	----	----	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)		----	<0.01	----	----	----
ø Weight Used for % Calculation	----	0.0001	kg		----	0.541	----	----	----
ø Fibrous Asbestos >7mm	----	0.0004	g		----	<0.0004	----	----	----
EG005T: Total Metals by ICP-AES									
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		----	4	3	3	----
Copper	7440-50-8	5	mg/kg		----	6	<5	<5	----
Lead	7439-92-1	5	mg/kg		----	20	<5	<5	----
Nickel	7440-02-0	2	mg/kg		----	2	<2	<2	----
Zinc	7440-66-6	5	mg/kg		----	92	<5	<5	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		----	<0.1	<0.1	<0.1	----
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	1	mg/kg		----	----	<1	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	----	<0.1	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH409_4.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH410_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-022	ES1829955-023	ES1829955-024	ES1829955-026	ES1829955-028
					Result	Result	Result	Result	Result
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	----	----
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	72-54-8/72-55-9/50-2	0.05	mg/kg		----	----	<0.05	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg		----	----	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg		----	----	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg		----	----	<0.05	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH409_4.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH410_3.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-022	ES1829955-023	ES1829955-024	ES1829955-026	ES1829955-028
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Fenthion	55-38-9	0.05	mg/kg	----	----	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg	----	----	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg	----	----	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg	----	----	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg	----	----	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	<0.05	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
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	----
Styrene	100-42-5	0.5	mg/kg	----	----	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	----	<0.5	----
Isopropylbenzene	98-82-8	0.5	mg/kg	----	----	----	<0.5	----
n-Propylbenzene	103-65-1	0.5	mg/kg	----	----	----	<0.5	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	----	----	----	<0.5	----
sec-Butylbenzene	135-98-8	0.5	mg/kg	----	----	----	<0.5	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	----	----	----	<0.5	----
tert-Butylbenzene	98-06-6	0.5	mg/kg	----	----	----	<0.5	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg	----	----	----	<0.5	----
n-Butylbenzene	104-51-8	0.5	mg/kg	----	----	----	<0.5	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	5	mg/kg	----	----	----	<5	----
2-Butanone (MEK)	78-93-3	5	mg/kg	----	----	----	<5	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	----	----	----	<5	----
2-Hexanone (MBK)	591-78-6	5	mg/kg	----	----	----	<5	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	----	----	----	<0.5	----
EP074D: Fumigants								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH409_4.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH410_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-022	ES1829955-023	ES1829955-024	ES1829955-026	ES1829955-028
					Result	Result	Result	Result	Result
EP074D: Fumigants - Continued									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		----	----	----	<0.5	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		----	----	----	<0.5	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		----	----	----	<0.5	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		----	----	----	<5	----
Chloromethane	74-87-3	5	mg/kg		----	----	----	<5	----
Vinyl chloride	75-01-4	5	mg/kg		----	----	----	<5	----
Bromomethane	74-83-9	5	mg/kg		----	----	----	<5	----
Chloroethane	75-00-3	5	mg/kg		----	----	----	<5	----
Trichlorofluoromethane	75-69-4	5	mg/kg		----	----	----	<5	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		----	----	----	<0.5	----
Iodomethane	74-88-4	0.5	mg/kg		----	----	----	<0.5	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		----	----	----	<0.5	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		----	----	----	<0.5	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		----	----	----	<0.5	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		----	----	----	<0.5	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		----	----	----	<0.5	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		----	----	----	<0.5	----
Trichloroethene	79-01-6	0.5	mg/kg		----	----	----	<0.5	----
Dibromomethane	74-95-3	0.5	mg/kg		----	----	----	<0.5	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		----	----	----	<0.5	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		----	----	----	<0.5	----
Tetrachloroethene	127-18-4	0.5	mg/kg		----	----	----	<0.5	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		----	----	----	<0.5	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		----	----	----	<0.5	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		----	----	----	<0.5	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		----	----	----	<0.5	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		----	----	----	<0.5	----
Pentachloroethane	76-01-7	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		----	----	----	<0.5	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		----	----	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH409_4.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH410_3.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-022	ES1829955-023	ES1829955-024	ES1829955-026	ES1829955-028
				Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	0.5	mg/kg	----	----	----	<0.5	----
Bromobenzene	108-86-1	0.5	mg/kg	----	----	----	<0.5	----
2-Chlorotoluene	95-49-8	0.5	mg/kg	----	----	----	<0.5	----
4-Chlorotoluene	106-43-4	0.5	mg/kg	----	----	----	<0.5	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	----	----	----	<0.5	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	----	----	----	<0.5	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	----	----	----	<0.5	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	----	----	----	<0.5	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	----	----	----	<0.5	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	0.5	mg/kg	----	----	----	<0.5	----
Bromodichloromethane	75-27-4	0.5	mg/kg	----	----	----	<0.5	----
Dibromochloromethane	124-48-1	0.5	mg/kg	----	----	----	<0.5	----
Bromoform	75-25-2	0.5	mg/kg	----	----	----	<0.5	----
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	----	----	----	<1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Pyrene	129-00-0	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Chrysene	218-01-9	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	<0.5	<0.5	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH409_4.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH410_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-022	ES1829955-023	ES1829955-024	ES1829955-026	ES1829955-028
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**0.6**	**0.6**	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**1.2**	**1.2**	**1.2**	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	<10	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg		----	<50	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg		----	<100	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg		----	<100	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg		----	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg		----	<100	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg		----	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	<50	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	<50	<50	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
^ Total Xylenes	----	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg		----	<1	<1	<1	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	**117**	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	**99.8**	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	**88.5**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH409_4.0	SRT_BH410_0.2	SRT_BH410_0.8	SRT_BH410_1.5	SRT_BH410_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-022	ES1829955-023	ES1829955-024	ES1829955-026	ES1829955-028
					Result	Result	Result	Result	Result
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		----	----	----	89.1	----
Toluene-D8	2037-26-5	0.5	%		----	----	----	98.6	----
4-Bromofluorobenzene	460-00-4	0.5	%		----	----	----	93.3	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	77.2	75.2	79.6	----
2-Chlorophenol-D4	93951-73-6	0.5	%		----	80.1	77.3	83.3	----
2.4.6-Tribromophenol	118-79-6	0.5	%		----	65.4	49.7	62.6	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	84.1	83.1	87.6	----
Anthracene-d10	1719-06-8	0.5	%		----	88.1	87.6	90.5	----
4-Terphenyl-d14	1718-51-0	0.5	%		----	79.5	79.4	81.1	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	101	87.7	99.2	----
Toluene-D8	2037-26-5	0.2	%		----	105	79.5	113	----
4-Bromofluorobenzene	460-00-4	0.2	%		----	100	87.2	107	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH411_0.15	SRT_BH411_0.5	SRT_BH411_1.0	SRT_BH411_2.0	SRT_BH411_3.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-029	ES1829955-030	ES1829955-031	ES1829955-033	ES1829955-034
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	----	----	----	----	**5.8**
pH OX (23B)	----	0.1	pH Unit	----	----	----	----	**5.4**
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	----	----	----	**2**
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	----	----	----	**69**
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	----	----	----	**67**
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	----	----	----	<0.020
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	----	----	----	**0.111**
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	----	----	----	**0.107**
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	----	----	----	<0.020
Peroxide Sulfur (23De)	----	0.020	% S	----	----	----	----	<0.020
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	----	----	----	<0.020
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	----	----	----	<10
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	----	----	----	**0.024**
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	----	----	----	**0.024**
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	----	----	----	<0.020
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	----	----	----	<10
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	----	----	----	<0.020
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	----	----	----	<0.020
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	----	----	----	<0.020
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	----	----	----	<0.020
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	----	----	----	<10
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	----	----	----	<0.020
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	----	----	----	**1.5**
Net Acidity (sulfur units)	----	0.02	% S	----	----	----	----	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	----	----	<10
Liming Rate	----	1	kg CaCO3/t	----	----	----	----	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH411_0.15	SRT_BH411_0.5	SRT_BH411_1.0	SRT_BH411_2.0	SRT_BH411_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-029	ES1829955-030	ES1829955-031	ES1829955-033	ES1829955-034
					Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued									
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		----	----	----	----	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		----	----	----	----	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t		----	----	----	----	<1
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		----	**6.7**	**4.0**	**3.3**	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		**No**	----	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres		**No**	----	----	----	----
Asbestos Type	1332-21-4	-	--		**-**	----	----	----	----
Sample weight (dry)	----	0.01	g		**756**	----	----	----	----
APPROVED IDENTIFIER:	----	-	--		**G.MORGAN**	----	----	----	----
EA200N: Asbestos Quantification (non-NATA)									
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g		<0.0004	----	----	----	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		<0.001	----	----	----	----
ø Asbestos Containing Material	1332-21-4	0.1	g		<0.1	----	----	----	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)		<0.01	----	----	----	----
ø Weight Used for % Calculation	----	0.0001	kg		**0.756**	----	----	----	----
ø Fibrous Asbestos >7mm	----	0.0004	g		<0.0004	----	----	----	----
EG005T: Total Metals by ICP-AES									
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		----	**3**	<2	<2	----
Copper	7440-50-8	5	mg/kg		----	**27**	<5	<5	----
Lead	7439-92-1	5	mg/kg		----	**95**	<5	<5	----
Nickel	7440-02-0	2	mg/kg		----	**2**	<2	<2	----
Zinc	7440-66-6	5	mg/kg		----	**108**	<5	<5	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		----	**0.3**	<0.1	<0.1	----
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	1	mg/kg		----	<1	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	<0.1	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH411_0.15	SRT_BH411_0.5	SRT_BH411_1.0	SRT_BH411_2.0	SRT_BH411_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-029	ES1829955-030	ES1829955-031	ES1829955-033	ES1829955-034
					Result	Result	Result	Result	Result
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		----	**0.12**	----	----	----
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	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		----	<0.2	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		----	**0.12**	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		----	<0.05	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	<0.05	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		----	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg		----	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	<0.05	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg		----	<0.05	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH411_0.15	SRT_BH411_0.5	SRT_BH411_1.0	SRT_BH411_2.0	SRT_BH411_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-029	ES1829955-030	ES1829955-031	ES1829955-033	ES1829955-034
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Fenthion	55-38-9	0.05	mg/kg		----	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg		----	<0.2	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		----	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg		----	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		----	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	<0.05	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		----	**0.5**	<0.5	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		----	**0.5**	<0.5	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	**1.0**	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**0.6**	**0.6**	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**1.2**	**1.2**	**1.2**	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	<10	<10	<10	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH411_0.15	SRT_BH411_0.5	SRT_BH411_1.0	SRT_BH411_2.0	SRT_BH411_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-029	ES1829955-030	ES1829955-031	ES1829955-033	ES1829955-034
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C10 - C14 Fraction	----	50	mg/kg		----	<50	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg		----	<100	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg		----	<100	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg		----	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg		----	<100	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg		----	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	<50	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	<50	<50	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
^ Total Xylenes	----	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg		----	<1	<1	<1	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	**128**	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	**93.5**	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	**96.6**	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	**74.2**	**80.9**	**77.7**	----
2-Chlorophenol-D4	93951-73-6	0.5	%		----	**76.2**	**84.9**	**80.7**	----
2.4.6-Tribromophenol	118-79-6	0.5	%		----	**52.6**	**62.0**	**51.6**	----
EP075(SIM)T: PAH Surrogates									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH411_0.15	SRT_BH411_0.5	SRT_BH411_1.0	SRT_BH411_2.0	SRT_BH411_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-029	ES1829955-030	ES1829955-031	ES1829955-033	ES1829955-034
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued									
2-Fluorobiphenyl	321-60-8	0.5	%		----	80.9	89.9	85.3	----
Anthracene-d10	1719-06-8	0.5	%		----	85.1	93.7	88.5	----
4-Terphenyl-d14	1718-51-0	0.5	%		----	77.4	84.5	80.1	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	106	94.4	98.0	----
Toluene-D8	2037-26-5	0.2	%		----	98.4	93.6	94.6	----
4-Bromofluorobenzene	460-00-4	0.2	%		----	103	97.8	99.6	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH412_0.11	SRT_BH412_0.5	SRT_BH412_1.0	SRT_BH412_2.0	SRT_BH412_3.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-035	ES1829955-036	ES1829955-037	ES1829955-039	ES1829955-040
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	----	----	----	----	**6.0**
pH OX (23B)	----	0.1	pH Unit	----	----	----	----	**5.4**
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	----	----	----	<2
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	----	----	----	**75**
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	----	----	----	**75**
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	----	----	----	<0.020
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	----	----	----	**0.121**
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	----	----	----	**0.121**
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	----	----	----	<0.020
Peroxide Sulfur (23De)	----	0.020	% S	----	----	----	----	<0.020
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	----	----	----	<0.020
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	----	----	----	<10
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	----	----	----	**0.028**
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	----	----	----	**0.028**
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	----	----	----	<0.020
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	----	----	----	<10
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	----	----	----	<0.020
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	----	----	----	<0.020
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	----	----	----	<0.020
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	----	----	----	<0.020
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	----	----	----	<10
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	----	----	----	<0.020
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	----	----	----	**1.5**
Net Acidity (sulfur units)	----	0.02	% S	----	----	----	----	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	----	----	<10
Liming Rate	----	1	kg CaCO3/t	----	----	----	----	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH412_0.11	SRT_BH412_0.5	SRT_BH412_1.0	SRT_BH412_2.0	SRT_BH412_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-035	ES1829955-036	ES1829955-037	ES1829955-039	ES1829955-040
					Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued									
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		----	----	----	----	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		----	----	----	----	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t		----	----	----	----	<1
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		10.8	10.9	9.4	8.7	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		----	No	No	----	----
Asbestos (Trace)	1332-21-4	5	Fibres		----	No	No	----	----
Asbestos Type	1332-21-4	-	--		----	-	-	----	----
Sample weight (dry)	----	0.01	g		----	618	536	----	----
APPROVED IDENTIFIER:	----	-	--		----	G.MORGAN	G.MORGAN	----	----
EA200N: Asbestos Quantification (non-NATA)									
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g		----	<0.0004	<0.0004	----	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		----	<0.001	<0.001	----	----
ø Asbestos Containing Material	1332-21-4	0.1	g		----	<0.1	<0.1	----	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)		----	<0.01	<0.01	----	----
ø Weight Used for % Calculation	----	0.0001	kg		----	0.618	0.536	----	----
ø Fibrous Asbestos >7mm	----	0.0004	g		----	<0.0004	<0.0004	----	----
EG005T: Total Metals by ICP-AES									
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		----	11	7	5	----
Copper	7440-50-8	5	mg/kg		----	21	12	<5	----
Lead	7439-92-1	5	mg/kg		----	28	63	<5	----
Nickel	7440-02-0	2	mg/kg		----	7	4	4	----
Zinc	7440-66-6	5	mg/kg		----	54	126	69	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		----	<0.1	<0.1	<0.1	----
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	1	mg/kg		<1	----	<1	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	----	0.1	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH412_0.11	SRT_BH412_0.5	SRT_BH412_1.0	SRT_BH412_2.0	SRT_BH412_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-035	ES1829955-036	ES1829955-037	ES1829955-039	ES1829955-040
					Result	Result	Result	Result	Result
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	----	**0.23**	----	----
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	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	<0.05	----	----
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	----	**0.23**	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	<0.05	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	----	<0.05	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH412_0.11	SRT_BH412_0.5	SRT_BH412_1.0	SRT_BH412_2.0	SRT_BH412_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-035	ES1829955-036	ES1829955-037	ES1829955-039	ES1829955-040
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	----	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	----	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	<0.05	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		----	**2.8**	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		----	**0.8**	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		----	**3.4**	**0.8**	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		----	**3.6**	**0.8**	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	**1.2**	<0.5	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		----	**1.2**	<0.5	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	**1.2**	<0.5	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	**1.2**	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	**0.6**	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	**16.0**	**1.6**	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	**1.4**	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**1.8**	**0.6**	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**2.0**	**1.2**	**1.2**	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	<10	<10	<10	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH412_0.11	SRT_BH412_0.5	SRT_BH412_1.0	SRT_BH412_2.0	SRT_BH412_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-035	ES1829955-036	ES1829955-037	ES1829955-039	ES1829955-040
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C10 - C14 Fraction	----	50	mg/kg		----	<50	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg		----	**160**	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg		----	**140**	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	**300**	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg		----	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg		----	**240**	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg		----	**160**	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	**400**	<50	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	<50	<50	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
^ Total Xylenes	----	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg		----	<1	<1	<1	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**119**	----	**95.6**	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**76.1**	----	**89.8**	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**67.3**	----	**95.2**	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	**75.4**	**76.9**	**79.8**	----
2-Chlorophenol-D4	93951-73-6	0.5	%		----	**63.0**	**79.5**	**84.0**	----
2.4.6-Tribromophenol	118-79-6	0.5	%		----	**27.0**	**49.1**	**64.8**	----
EP075(SIM)T: PAH Surrogates									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH412_0.11	SRT_BH412_0.5	SRT_BH412_1.0	SRT_BH412_2.0	SRT_BH412_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-035	ES1829955-036	ES1829955-037	ES1829955-039	ES1829955-040
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued									
2-Fluorobiphenyl	321-60-8	0.5	%		----	85.0	83.2	87.2	----
Anthracene-d10	1719-06-8	0.5	%		----	88.1	89.3	92.5	----
4-Terphenyl-d14	1718-51-0	0.5	%		----	76.5	80.6	82.3	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	108	100	99.8	----
Toluene-D8	2037-26-5	0.2	%		----	103	96.0	91.9	----
4-Bromofluorobenzene	460-00-4	0.2	%		----	105	97.9	99.6	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-041	ES1829955-042	ES1829955-043	ES1829955-044	ES1829955-046
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	----	----	----	----	**6.0**
pH OX (23B)	----	0.1	pH Unit	----	----	----	----	**5.2**
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	----	----	----	<2
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	----	----	----	**66**
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	----	----	----	**66**
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	----	----	----	<0.020
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	----	----	----	**0.105**
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	----	----	----	**0.105**
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	----	----	----	<0.020
Peroxide Sulfur (23De)	----	0.020	% S	----	----	----	----	<0.020
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	----	----	----	<0.020
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	----	----	----	<10
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	----	----	----	<0.020
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	----	----	----	<0.020
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	----	----	----	<0.020
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	----	----	----	<10
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	----	----	----	<0.020
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	----	----	----	<0.020
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	----	----	----	<0.020
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	----	----	----	<0.020
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	----	----	----	<10
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	----	----	----	<0.020
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	----	----	----	**1.5**
Net Acidity (sulfur units)	----	0.02	% S	----	----	----	----	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	----	----	<10
Liming Rate	----	1	kg CaCO3/t	----	----	----	----	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-041	ES1829955-042	ES1829955-043	ES1829955-044	ES1829955-046
					Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued									
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		----	----	----	----	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		----	----	----	----	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t		----	----	----	----	<1
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		----	----	**16.7**	----	----
Moisture Content	----	1.0	%		**13.0**	**13.2**	----	**31.6**	**6.2**
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		**No**	----	**No**	----	----
Asbestos (Trace)	1332-21-4	5	Fibres		**No**	----	**No**	----	----
Asbestos Type	1332-21-4	-	--		**-**	----	**-**	----	----
Sample weight (dry)	----	0.01	g		**532**	----	**408**	----	----
APPROVED IDENTIFIER:	----	-	--		**G.MORGAN**	----	**G.MORGAN**	----	----
EA200N: Asbestos Quantification (non-NATA)									
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g		<0.0004	----	<0.0004	----	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		<0.001	----	<0.001	----	----
ø Asbestos Containing Material	1332-21-4	0.1	g		<0.1	----	<0.1	----	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)		<0.01	----	<0.01	----	----
ø Weight Used for % Calculation	----	0.0001	kg		**0.532**	----	**0.408**	----	----
ø Fibrous Asbestos >7mm	----	0.0004	g		<0.0004	----	<0.0004	----	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		**6**	<5	----	<5	<5
Cadmium	7440-43-9	1	mg/kg		**6**	<1	----	<1	<1
Chromium	7440-47-3	2	mg/kg		**20**	**7**	----	<2	<2
Copper	7440-50-8	5	mg/kg		**28**	**40**	----	<5	<5
Lead	7439-92-1	5	mg/kg		**813**	**276**	----	**7**	<5
Nickel	7440-02-0	2	mg/kg		**3**	**5**	----	<2	<2
Zinc	7440-66-6	5	mg/kg		**2100**	**227**	----	**6**	**14**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		**0.2**	**1.6**	----	<0.1	<0.1
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	1	mg/kg		----	<1	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-041	ES1829955-042	ES1829955-043	ES1829955-044	ES1829955-046
				Result	Result	Result	Result	Result
EP066: Polychlorinated Biphenyls (PCB) - Continued								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<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	----	----	----
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	72-54-8/72-55-9/50-29-3	0.05	mg/kg	----	<0.05	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	<0.05	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	----	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg	----	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	<0.05	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-041	ES1829955-042	ES1829955-043	ES1829955-044	ES1829955-046
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Parathion-methyl	298-00-0	0.2	mg/kg		----	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg		----	<0.05	----	----	----
Fenthion	55-38-9	0.05	mg/kg		----	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg		----	<0.2	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		----	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg		----	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		----	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	<0.05	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Styrene	100-42-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		<5	----	<5	----	<5
2-Butanone (MEK)	78-93-3	5	mg/kg		<5	----	<5	----	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		<5	----	<5	----	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg		<5	----	<5	----	<5
EP074C: Sulfonated Compounds									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-041	ES1829955-042	ES1829955-043	ES1829955-044	ES1829955-046
					Result	Result	Result	Result	Result
EP074C: Sulfonated Compounds - Continued									
Carbon disulfide	75-15-0	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.2-Dichloropropane	78-87-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		<5	----	<5	----	<5
Chloromethane	74-87-3	5	mg/kg		<5	----	<5	----	<5
Vinyl chloride	75-01-4	5	mg/kg		<5	----	<5	----	<5
Bromomethane	74-83-9	5	mg/kg		<5	----	<5	----	<5
Chloroethane	75-00-3	5	mg/kg		<5	----	<5	----	<5
Trichlorofluoromethane	75-69-4	5	mg/kg		<5	----	<5	----	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Iodomethane	74-88-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Trichloroethene	79-01-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Dibromomethane	74-95-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-041	ES1829955-042	ES1829955-043	ES1829955-044	ES1829955-046
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Bromobenzene	108-86-1	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Bromoform	75-25-2	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	----	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	1.0	----	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		1.1	1.7	----	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		1.2	1.7	----	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		0.5	0.8	----	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		0.5	0.7	----	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		0.7	0.8	----	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		0.6	0.8	----	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-041	ES1829955-042	ES1829955-043	ES1829955-044	ES1829955-046
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		**4.6**	**7.5**	----	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		**0.7**	**1.0**	----	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**1.0**	**1.3**	----	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.3**	**1.6**	----	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	----	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	----	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	----	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	----	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	----	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	----	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	----	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	----	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	----	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	----	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	----	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	**80.0**	----	----	----
EP068S: Organochlorine Pesticide Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH416_0.25	SRT_BH416_0.5	SRT_BH416_1.0	SRT_BH416_1.5	SRT_BH416_3.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-041	ES1829955-042	ES1829955-043	ES1829955-044	ES1829955-046
					Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate - Continued									
Dibromo-DDE	21655-73-2	0.05	%		----	87.8	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	67.4	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		92.0	----	87.8	----	90.8
Toluene-D8	2037-26-5	0.5	%		97.8	----	91.7	----	103
4-Bromofluorobenzene	460-00-4	0.5	%		91.3	----	85.5	----	96.6
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		79.2	74.4	----	76.7	74.3
2-Chlorophenol-D4	93951-73-6	0.5	%		82.7	78.2	----	80.1	77.6
2.4.6-Tribromophenol	118-79-6	0.5	%		65.6	57.6	----	61.2	56.0
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		86.4	82.4	----	84.1	81.2
Anthracene-d10	1719-06-8	0.5	%		90.6	88.1	----	88.0	85.0
4-Terphenyl-d14	1718-51-0	0.5	%		80.3	78.6	----	78.2	74.5
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		102	100	----	89.9	101
Toluene-D8	2037-26-5	0.2	%		112	105	----	87.7	119
4-Bromofluorobenzene	460-00-4	0.2	%		107	101	----	93.0	111

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT_BH421_0.25
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-048	ES1829955-049	ES1829955-050	ES1829955-051	ES1829955-052
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		----	----	5.1	----	----
Moisture Content	----	1.0	%		13.8	6.1	----	4.7	18.4
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		No	----	----	----	No
Asbestos (Trace)	1332-21-4	5	Fibres		No	----	----	----	No
Asbestos Type	1332-21-4	-	--		-	----	----	----	-
Sample weight (dry)	----	0.01	g		486	----	----	----	658
APPROVED IDENTIFIER:	----	-	--		G.MORGAN	----	----	----	G.MORGAN
EA200N: Asbestos Quantification (non-NATA)									
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g		<0.0004	----	----	----	<0.0004
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		<0.001	----	----	----	<0.001
ø Asbestos Containing Material	1332-21-4	0.1	g		<0.1	----	----	----	<0.1
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)		<0.01	----	----	----	<0.01
ø Weight Used for % Calculation	----	0.0001	kg		0.486	----	----	----	0.658
ø Fibrous Asbestos >7mm	----	0.0004	g		<0.0004	----	----	----	<0.0004
EG005T: Total Metals by ICP-AES									
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		15	22	----	2	----
Copper	7440-50-8	5	mg/kg		32	5	----	<5	----
Lead	7439-92-1	5	mg/kg		30	9	----	<5	----
Nickel	7440-02-0	2	mg/kg		23	<2	----	<2	----
Zinc	7440-66-6	5	mg/kg		265	11	----	8	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	----	<0.1	----
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	1	mg/kg		<1	<1	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT_BH421_0.25
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-048	ES1829955-049	ES1829955-050	ES1829955-051	ES1829955-052
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
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
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	----	----	<0.05
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	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	----	----	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	----	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	----	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	----	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	----	----	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	----	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	----	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	----	----	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	----	----	----	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	----	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	----	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT_BH421_0.25
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-048	ES1829955-049	ES1829955-050	ES1829955-051	ES1829955-052
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Parathion	56-38-2	0.2	mg/kg		<0.2	----	----	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	----	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	----	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	----	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	----	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	----	----	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	----	----	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	----	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	----	----	<0.05
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Styrene	100-42-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Isopropylbenzene	98-82-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
n-Propylbenzene	103-65-1	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
sec-Butylbenzene	135-98-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
tert-Butylbenzene	98-06-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
n-Butylbenzene	104-51-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		<5	----	<5	<5	----
2-Butanone (MEK)	78-93-3	5	mg/kg		<5	----	<5	<5	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		<5	----	<5	<5	----
2-Hexanone (MBK)	591-78-6	5	mg/kg		<5	----	<5	<5	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT_BH421_0.25
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-048	ES1829955-049	ES1829955-050	ES1829955-051	ES1829955-052
					Result	Result	Result	Result	Result
EP074D: Fumigants - Continued									
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		<5	----	<5	<5	----
Chloromethane	74-87-3	5	mg/kg		<5	----	<5	<5	----
Vinyl chloride	75-01-4	5	mg/kg		<5	----	<5	<5	----
Bromomethane	74-83-9	5	mg/kg		<5	----	<5	<5	----
Chloroethane	75-00-3	5	mg/kg		<5	----	<5	<5	----
Trichlorofluoromethane	75-69-4	5	mg/kg		<5	----	<5	<5	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Iodomethane	74-88-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Trichloroethene	79-01-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Dibromomethane	74-95-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Tetrachloroethene	127-18-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Pentachloroethane	76-01-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT_BH421_0.25
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-048	ES1829955-049	ES1829955-050	ES1829955-051	ES1829955-052
					Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued									
Bromobenzene	108-86-1	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
2-Chlorotoluene	95-49-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
4-Chlorotoluene	106-43-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Bromodichloromethane	75-27-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Dibromochloromethane	124-48-1	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Bromoform	75-25-2	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	<1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT_BH421_0.25
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-048	ES1829955-049	ES1829955-050	ES1829955-051	ES1829955-052
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg		**0.6**	**0.6**	----	**0.6**	----
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		**1.2**	**1.2**	----	**1.2**	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	----	<10	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	----	<50	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	----	<100	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	----	<100	----
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		<50	<50	----	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	<10	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	----	<10	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	----	<50	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	----	<100	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	----	<100	----
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	<50	----	<50	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	<50	----	<50	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	----	<0.2	----
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	<1	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**103**	**105**	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**96.8**	----	----	----	**112**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**98.9**	----	----	----	**77.0**
EP074S: VOC Surrogates									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH417_0.5	SRT_BH417_1.5	SRT_BH417_2.0	SRT_BH417_3.0	SRT_BH421_0.25
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-048	ES1829955-049	ES1829955-050	ES1829955-051	ES1829955-052
					Result	Result	Result	Result	Result
EP074S: VOC Surrogates - Continued									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		87.2	----	98.1	101	----
Toluene-D8	2037-26-5	0.5	%		99.9	----	102	104	----
4-Bromofluorobenzene	460-00-4	0.5	%		88.6	----	96.2	95.1	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		72.7	75.7	----	83.2	----
2-Chlorophenol-D4	93951-73-6	0.5	%		74.0	78.6	----	86.2	----
2.4.6-Tribromophenol	118-79-6	0.5	%		40.0	48.1	----	56.2	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		80.6	84.6	----	91.4	----
Anthracene-d10	1719-06-8	0.5	%		86.0	90.1	----	95.4	----
4-Terphenyl-d14	1718-51-0	0.5	%		79.0	80.6	----	84.6	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		96.8	102	----	113	----
Toluene-D8	2037-26-5	0.2	%		114	92.9	----	120	----
4-Bromofluorobenzene	460-00-4	0.2	%		102	99.0	----	105	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH421_0.5	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-053	ES1829955-054	ES1829955-057	ES1829955-058	ES1829955-059
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	----	----	**6.0**	----	----
pH OX (23B)	----	0.1	pH Unit	----	----	**5.2**	----	----
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	----	<2	----	----
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	----	**70**	----	----
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	----	**70**	----	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	----	<0.020	----	----
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	----	**0.113**	----	----
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	----	**0.113**	----	----
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	----	<0.020	----	----
Peroxide Sulfur (23De)	----	0.020	% S	----	----	<0.020	----	----
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	----	<0.020	----	----
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	----	<10	----	----
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	----	<0.020	----	----
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	----	<0.020	----	----
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	----	<0.020	----	----
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	----	<10	----	----
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	----	<0.020	----	----
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	----	<0.020	----	----
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	----	<0.020	----	----
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	----	<0.020	----	----
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	----	<10	----	----
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	----	<0.020	----	----
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	----	**1.5**	----	----
Net Acidity (sulfur units)	----	0.02	% S	----	----	<0.02	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	<10	----	----
Liming Rate	----	1	kg CaCO3/t	----	----	<1	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH421_0.5	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-053	ES1829955-054	ES1829955-057	ES1829955-058	ES1829955-059
					Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued									
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		----	----	<0.02	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		----	----	<10	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t		----	----	<1	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		**12.1**	**9.7**	**4.2**	**14.0**	**10.8**
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		----	----	----	**No**	----
Asbestos (Trace)	1332-21-4	5	Fibres		----	----	----	**No**	----
Asbestos Type	1332-21-4	-	--		----	----	----	**-**	----
Sample weight (dry)	----	0.01	g		----	----	----	**577**	----
APPROVED IDENTIFIER:	----	-	--		----	----	----	**G.MORGAN**	----
EA200N: Asbestos Quantification (non-NATA)									
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g		----	----	----	<0.0004	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		----	----	----	<0.001	----
ø Asbestos Containing Material	1332-21-4	0.1	g		----	----	----	<0.1	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)		----	----	----	<0.01	----
ø Weight Used for % Calculation	----	0.0001	kg		----	----	----	**0.577**	----
ø Fibrous Asbestos >7mm	----	0.0004	g		----	----	----	<0.0004	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		**12**	**3**	<2	**3**	<2
Copper	7440-50-8	5	mg/kg		**20**	<5	<5	**30**	<5
Lead	7439-92-1	5	mg/kg		**22**	<5	<5	**261**	**31**
Nickel	7440-02-0	2	mg/kg		**10**	<2	<2	**3**	<2
Zinc	7440-66-6	5	mg/kg		**48**	<5	**18**	**150**	**47**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	**0.2**	<0.1
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	1	mg/kg		----	----	----	<1	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	----	----	<0.1	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH421_0.5	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-053	ES1829955-054	ES1829955-057	ES1829955-058	ES1829955-059
					Result	Result	Result	Result	Result
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	----
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**	72-54-8/72-55-9/50-2	0.05	mg/kg		----	----	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg		----	----	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg		----	----	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg		----	----	----	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH421_0.5	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-053	ES1829955-054	ES1829955-057	ES1829955-058	ES1829955-059
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Fenthion	55-38-9	0.05	mg/kg		----	----	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg		----	----	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg		----	----	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg		----	----	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg		----	----	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	----	<0.05	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		**1.8**	<0.5	<0.5	**1.8**	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		**2.2**	<0.5	<0.5	**3.3**	**0.8**
Pyrene	129-00-0	0.5	mg/kg		**2.3**	<0.5	<0.5	**3.2**	**0.8**
Benz(a)anthracene	56-55-3	0.5	mg/kg		**0.8**	<0.5	<0.5	**1.4**	<0.5
Chrysene	218-01-9	0.5	mg/kg		**0.8**	<0.5	<0.5	**1.2**	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		**0.8**	<0.5	<0.5	**1.4**	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	**0.6**	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		**0.8**	<0.5	<0.5	**1.4**	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	**0.5**	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	**0.6**	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		**9.5**	<0.5	<0.5	**15.4**	**1.6**
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		**1.0**	<0.5	<0.5	**1.8**	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**1.3**	**0.6**	**0.6**	**2.0**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.6**	**1.2**	**1.2**	**2.3**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH421_0.5	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-053	ES1829955-054	ES1829955-057	ES1829955-058	ES1829955-059
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		**120**	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		**200**	<100	<100	<100	<100
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		**320**	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		**260**	<100	<100	**160**	<100
>C34 - C40 Fraction	----	100	mg/kg		**240**	<100	<100	<100	<100
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		**500**	<50	<50	**160**	<50
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<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		----	----	**0.0002**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH421_0.5	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-053	ES1829955-054	ES1829955-057	ES1829955-058	ES1829955-059
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
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		----	----	<0.0002	----	----
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 (PFTrDA)	72629-94-8	0.0002	mg/kg		----	----	<0.0002	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		----	----	<0.0005	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		----	----	<0.0002	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		----	----	<0.0005	----	----
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									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH421_0.5	SRT_BH421_1.0	SRT_BH421_3.0	SRT_BH422_0.5	SRT_BH422_1.0
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-053	ES1829955-054	ES1829955-057	ES1829955-058	ES1829955-059
					Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued									
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		----	----	**0.0002**	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		----	----	**0.0002**	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		----	----	**0.0002**	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	**99.0**	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	----	**99.9**	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	----	**65.3**	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**78.4**	**75.4**	**78.5**	**73.5**	**75.6**
2-Chlorophenol-D4	93951-73-6	0.5	%		**76.3**	**79.1**	**81.9**	**75.4**	**78.6**
2.4.6-Tribromophenol	118-79-6	0.5	%		**44.6**	**61.7**	**57.8**	**46.8**	**56.9**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**87.5**	**82.8**	**85.7**	**80.8**	**82.5**
Anthracene-d10	1719-06-8	0.5	%		**89.6**	**87.8**	**90.6**	**86.6**	**86.8**
4-Terphenyl-d14	1718-51-0	0.5	%		**80.0**	**77.4**	**80.8**	**77.2**	**76.0**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**109**	**99.7**	**107**	**106**	**99.2**
Toluene-D8	2037-26-5	0.2	%		**102**	**86.8**	**106**	**113**	**99.4**
4-Bromofluorobenzene	460-00-4	0.2	%		**108**	**94.0**	**108**	**111**	**101**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	----	**104**	----	----
13C8-PFOA	----	0.0002	%		----	----	**90.0**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH422_1.5	SRT_BH422_3.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0
			Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-060	ES1829955-062	ES1829955-063	ES1829955-064	ES1829955-065
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	----	**5.9**	----	----	----
pH OX (23B)	----	0.1	pH Unit	----	**5.1**	----	----	----
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	<2	----	----	----
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	**77**	----	----	----
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	**77**	----	----	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	<0.020	----	----	----
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	**0.123**	----	----	----
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	**0.123**	----	----	----
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	<0.020	----	----	----
Peroxide Sulfur (23De)	----	0.020	% S	----	<0.020	----	----	----
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	<0.020	----	----	----
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	<10	----	----	----
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	<0.020	----	----	----
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	<0.020	----	----	----
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	<0.020	----	----	----
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	<10	----	----	----
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	<0.020	----	----	----
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	<0.020	----	----	----
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	<0.020	----	----	----
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	<0.020	----	----	----
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	<10	----	----	----
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	<0.020	----	----	----
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	**1.5**	----	----	----
Net Acidity (sulfur units)	----	0.02	% S	----	<0.02	----	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	<10	----	----	----
Liming Rate	----	1	kg CaCO3/t	----	<1	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH422_1.5	SRT_BH422_3.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-060	ES1829955-062	ES1829955-063	ES1829955-064	ES1829955-065
					Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued									
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		----	<0.02	----	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		----	<10	----	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t		----	<1	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		**13.4**	----	**8.4**	**9.0**	**12.6**
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		----	----	**No**	----	----
Asbestos (Trace)	1332-21-4	5	Fibres		----	----	**No**	----	----
Asbestos Type	1332-21-4	-	--		----	----	-	----	----
Sample weight (dry)	----	0.01	g		----	----	**452**	----	----
APPROVED IDENTIFIER:	----	-	--		----	----	**C.OWLER**	----	----
EA200N: Asbestos Quantification (non-NATA)									
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g		----	----	<0.0004	----	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		----	----	<0.001	----	----
ø Asbestos Containing Material	1332-21-4	0.1	g		----	----	<0.1	----	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)		----	----	<0.01	----	----
ø Weight Used for % Calculation	----	0.0001	kg		----	----	**0.452**	----	----
ø Fibrous Asbestos >7mm	----	0.0004	g		----	----	<0.0004	----	----
EG005T: Total Metals by ICP-AES									
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		<2	----	**5**	----	**5**
Copper	7440-50-8	5	mg/kg		**5**	----	**21**	----	**37**
Lead	7439-92-1	5	mg/kg		**29**	----	**142**	----	**246**
Nickel	7440-02-0	2	mg/kg		<2	----	**2**	----	**3**
Zinc	7440-66-6	5	mg/kg		**108**	----	**122**	----	**171**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	**0.2**	----	**0.8**
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	1	mg/kg		----	----	----	<1	<1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	----	----	<0.1	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH422_1.5	SRT_BH422_3.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0
			Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-060	ES1829955-062	ES1829955-063	ES1829955-064	ES1829955-065
				Result	Result	Result	Result	Result
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	----
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	72-54-8/72-55-9/50-2	0.05	mg/kg	----	----	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	----	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg	----	----	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg	----	----	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg	----	----	----	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH422_1.5	SRT_BH422_3.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-060	ES1829955-062	ES1829955-063	ES1829955-064	ES1829955-065
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Fenthion	55-38-9	0.05	mg/kg		----	----	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg		----	----	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg		----	----	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg		----	----	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg		----	----	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	----	<0.05	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		----	----	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		----	----	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		----	----	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	----	<0.5	----	<0.5
Styrene	100-42-5	0.5	mg/kg		----	----	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		----	----	<0.5	----	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg		----	----	<0.5	----	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg		----	----	<0.5	----	<0.5
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		----	----	<0.5	----	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		----	----	<0.5	----	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg		----	----	<0.5	----	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg		----	----	<0.5	----	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg		----	----	<0.5	----	<0.5
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		----	----	<5	----	<5
2-Butanone (MEK)	78-93-3	5	mg/kg		----	----	<5	----	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		----	----	<5	----	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg		----	----	<5	----	<5
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		----	----	<0.5	----	<0.5
EP074D: Fumigants									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH422_1.5	SRT_BH422_3.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-060	ES1829955-062	ES1829955-063	ES1829955-064	ES1829955-065
					Result	Result	Result	Result	Result
EP074D: Fumigants - Continued									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2-Dichloropropane	78-87-5	0.5	mg/kg		----	----	<0.5	----	<0.5
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		----	----	<0.5	----	<0.5
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		----	----	<0.5	----	<0.5
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		----	----	<5	----	<5
Chloromethane	74-87-3	5	mg/kg		----	----	<5	----	<5
Vinyl chloride	75-01-4	5	mg/kg		----	----	<5	----	<5
Bromomethane	74-83-9	5	mg/kg		----	----	<5	----	<5
Chloroethane	75-00-3	5	mg/kg		----	----	<5	----	<5
Trichlorofluoromethane	75-69-4	5	mg/kg		----	----	<5	----	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg		----	----	<0.5	----	<0.5
Iodomethane	74-88-4	0.5	mg/kg		----	----	<0.5	----	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		----	----	<0.5	----	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg		----	----	<0.5	----	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		----	----	<0.5	----	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		----	----	<0.5	----	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		----	----	<0.5	----	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg		----	----	<0.5	----	<0.5
Trichloroethene	79-01-6	0.5	mg/kg		----	----	<0.5	----	<0.5
Dibromomethane	74-95-3	0.5	mg/kg		----	----	<0.5	----	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		----	----	<0.5	----	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg		----	----	<0.5	----	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg		----	----	<0.5	----	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		----	----	<0.5	----	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		----	----	<0.5	----	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		----	----	<0.5	----	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		----	----	<0.5	----	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		----	----	<0.5	----	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg		----	----	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH422_1.5	SRT_BH422_3.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-060	ES1829955-062	ES1829955-063	ES1829955-064	ES1829955-065
					Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		----	----	<0.5	----	<0.5
Bromobenzene	108-86-1	0.5	mg/kg		----	----	<0.5	----	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg		----	----	<0.5	----	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg		----	----	<0.5	----	<0.5
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		----	----	<0.5	----	<0.5
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		----	----	<0.5	----	<0.5
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		----	----	<0.5	----	<0.5
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		----	----	<0.5	----	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg		----	----	<0.5	----	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg		----	----	<0.5	----	<0.5
Bromoform	75-25-2	0.5	mg/kg		----	----	<0.5	----	<0.5
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		----	----	<1	----	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		**0.9**	----	<0.5	----	**1.1**
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		**2.1**	----	**0.7**	----	**2.2**
Pyrene	129-00-0	0.5	mg/kg		**2.0**	----	**0.7**	----	**2.1**
Benz(a)anthracene	56-55-3	0.5	mg/kg		**0.9**	----	<0.5	----	**0.9**
Chrysene	218-01-9	0.5	mg/kg		**0.8**	----	<0.5	----	**0.8**
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		**0.8**	----	<0.5	----	**1.0**
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		**0.9**	----	<0.5	----	**0.9**
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		**8.4**	----	**1.4**	----	**9.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH422_1.5	SRT_BH422_3.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-060	ES1829955-062	ES1829955-063	ES1829955-064	ES1829955-065
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		**1.1**	----	<0.5	----	**1.1**
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**1.4**	----	**0.6**	----	**1.4**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.7**	----	**1.2**	----	**1.7**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg		<50	----	<50	----	<50
C15 - C28 Fraction	----	100	mg/kg		<100	----	<100	----	<100
C29 - C36 Fraction	----	100	mg/kg		<100	----	<100	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	<50	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	<10	----	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	----	<50	----	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	----	<100	----	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	----	<100	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	<50	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	<50	----	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	----	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	**98.6**	**92.2**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	----	**104**	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	----	**71.1**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH422_1.5	SRT_BH422_3.0	SRT_BH426_0.1	SRT_BH426_0.5	SRT_BH426_1.0
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-060	ES1829955-062	ES1829955-063	ES1829955-064	ES1829955-065
					Result	Result	Result	Result	Result
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		----	----	87.0	----	85.6
Toluene-D8	2037-26-5	0.5	%		----	----	98.3	----	104
4-Bromofluorobenzene	460-00-4	0.5	%		----	----	89.9	----	98.9
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		76.2	----	74.6	----	74.0
2-Chlorophenol-D4	93951-73-6	0.5	%		79.1	----	77.7	----	77.2
2.4.6-Tribromophenol	118-79-6	0.5	%		51.4	----	57.7	----	57.0
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		84.2	----	81.8	----	81.7
Anthracene-d10	1719-06-8	0.5	%		87.4	----	87.0	----	87.0
4-Terphenyl-d14	1718-51-0	0.5	%		77.0	----	78.5	----	77.3
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		104	----	97.1	----	95.8
Toluene-D8	2037-26-5	0.2	%		106	----	112	----	119
4-Bromofluorobenzene	460-00-4	0.2	%		104	----	99.5	----	115

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH426_2.0	SRT_BH426_4.0	SRT_BH426_5.0	QCA101	QCA102
			Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-067	ES1829955-069	ES1829955-070	ES1829955-074	ES1829955-075
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	----	5.9	5.9	----	----
pH OX (23B)	----	0.1	pH Unit	----	5.2	5.3	----	----
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	<2	<2	----	----
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	70	69	----	----
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	70	69	----	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	<0.020	<0.020	----	----
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	0.112	0.110	----	----
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	0.112	0.110	----	----
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	<0.020	<0.020	----	----
Peroxide Sulfur (23De)	----	0.020	% S	----	<0.020	<0.020	----	----
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	<0.020	<0.020	----	----
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	<10	<10	----	----
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	<0.020	<0.020	----	----
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	<0.020	<0.020	----	----
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	<0.020	<0.020	----	----
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	<10	<10	----	----
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	<0.020	<0.020	----	----
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	<0.020	<0.020	----	----
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	<0.020	<0.020	----	----
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	<0.020	<0.020	----	----
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	<10	<10	----	----
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	<0.020	<0.020	----	----
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	1.5	1.5	----	----
Net Acidity (sulfur units)	----	0.02	% S	----	<0.02	<0.02	----	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	<10	<10	----	----
Liming Rate	----	1	kg CaCO3/t	----	<1	<1	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT_BH426_2.0	SRT_BH426_4.0	SRT_BH426_5.0	QCA101	QCA102
			Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-067	ES1829955-069	ES1829955-070	ES1829955-074	ES1829955-075
				Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued								
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	<0.02	<0.02	----	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	<10	<10	----	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	<1	<1	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**6.1**	**16.5**	----	**3.0**	**10.6**
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	----	**No**	----
Asbestos (Trace)	1332-21-4	5	Fibres	----	----	----	**No**	----
Asbestos Type	1332-21-4	-	--	----	----	----	**-**	----
Sample weight (dry)	----	0.01	g	----	----	----	**35.7**	----
APPROVED IDENTIFIER:	----	-	--	----	----	----	**C.OWLER**	----
EA200N: Asbestos Quantification (non-NATA)								
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	----	----	----	<0.0004	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	----	----	----	<0.001	----
ø Asbestos Containing Material	1332-21-4	0.1	g	----	----	----	<0.1	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)	----	----	----	<0.01	----
ø Weight Used for % Calculation	----	0.0001	kg	----	----	----	**0.0357**	----
ø Fibrous Asbestos >7mm	----	0.0004	g	----	----	----	<0.0004	----
EG005T: 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	<2	<2	----	<2	**9**
Copper	7440-50-8	5	mg/kg	<5	<5	----	<5	**19**
Lead	7439-92-1	5	mg/kg	<5	<5	----	<5	**23**
Nickel	7440-02-0	2	mg/kg	<2	<2	----	<2	**6**
Zinc	7440-66-6	5	mg/kg	**10**	**6**	----	**5**	**53**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	<0.1	<0.1
EP035G: Total Phenol by Discrete Analyser								
Phenols (Total)	----	1	mg/kg	----	----	----	<1	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	<0.1	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH426_2.0	SRT_BH426_4.0	SRT_BH426_5.0	QCA101	QCA102
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-067	ES1829955-069	ES1829955-070	ES1829955-074	ES1829955-075
					Result	Result	Result	Result	Result
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	----
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	72-54-8/72-55-9/50-2	0.05	mg/kg		----	----	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg		----	----	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg		----	----	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg		----	----	----	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH426_2.0	SRT_BH426_4.0	SRT_BH426_5.0	QCA101	QCA102
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-067	ES1829955-069	ES1829955-070	ES1829955-074	ES1829955-075
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Fenthion	55-38-9	0.05	mg/kg		----	----	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg		----	----	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg		----	----	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg		----	----	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg		----	----	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	----	<0.05	----
EP074A: Monocyclic Aromatic Hydrocarbons									
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	----
Styrene	100-42-5	0.5	mg/kg		----	----	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		----	----	----	<0.5	----
Isopropylbenzene	98-82-8	0.5	mg/kg		----	----	----	<0.5	----
n-Propylbenzene	103-65-1	0.5	mg/kg		----	----	----	<0.5	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		----	----	----	<0.5	----
sec-Butylbenzene	135-98-8	0.5	mg/kg		----	----	----	<0.5	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		----	----	----	<0.5	----
tert-Butylbenzene	98-06-6	0.5	mg/kg		----	----	----	<0.5	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg		----	----	----	<0.5	----
n-Butylbenzene	104-51-8	0.5	mg/kg		----	----	----	<0.5	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		----	----	----	<5	----
2-Butanone (MEK)	78-93-3	5	mg/kg		----	----	----	<5	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		----	----	----	<5	----
2-Hexanone (MBK)	591-78-6	5	mg/kg		----	----	----	<5	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		----	----	----	<0.5	----
EP074D: Fumigants									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH426_2.0	SRT_BH426_4.0	SRT_BH426_5.0	QCA101	QCA102
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-067	ES1829955-069	ES1829955-070	ES1829955-074	ES1829955-075
					Result	Result	Result	Result	Result
EP074D: Fumigants - Continued									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		----	----	----	<0.5	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		----	----	----	<0.5	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		----	----	----	<0.5	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		----	----	----	<5	----
Chloromethane	74-87-3	5	mg/kg		----	----	----	<5	----
Vinyl chloride	75-01-4	5	mg/kg		----	----	----	<5	----
Bromomethane	74-83-9	5	mg/kg		----	----	----	<5	----
Chloroethane	75-00-3	5	mg/kg		----	----	----	<5	----
Trichlorofluoromethane	75-69-4	5	mg/kg		----	----	----	<5	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		----	----	----	<0.5	----
Iodomethane	74-88-4	0.5	mg/kg		----	----	----	<0.5	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		----	----	----	<0.5	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		----	----	----	<0.5	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		----	----	----	<0.5	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		----	----	----	<0.5	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		----	----	----	<0.5	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		----	----	----	<0.5	----
Trichloroethene	79-01-6	0.5	mg/kg		----	----	----	<0.5	----
Dibromomethane	74-95-3	0.5	mg/kg		----	----	----	<0.5	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		----	----	----	<0.5	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		----	----	----	<0.5	----
Tetrachloroethene	127-18-4	0.5	mg/kg		----	----	----	<0.5	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		----	----	----	<0.5	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		----	----	----	<0.5	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		----	----	----	<0.5	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		----	----	----	<0.5	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		----	----	----	<0.5	----
Pentachloroethane	76-01-7	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		----	----	----	<0.5	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		----	----	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH426_2.0	SRT_BH426_4.0	SRT_BH426_5.0	QCA101	QCA102
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-067	ES1829955-069	ES1829955-070	ES1829955-074	ES1829955-075
					Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		----	----	----	<0.5	----
Bromobenzene	108-86-1	0.5	mg/kg		----	----	----	<0.5	----
2-Chlorotoluene	95-49-8	0.5	mg/kg		----	----	----	<0.5	----
4-Chlorotoluene	106-43-4	0.5	mg/kg		----	----	----	<0.5	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		----	----	----	<0.5	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		----	----	----	<0.5	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		----	----	----	<0.5	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		----	----	----	<0.5	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		----	----	----	<0.5	----
Bromodichloromethane	75-27-4	0.5	mg/kg		----	----	----	<0.5	----
Dibromochloromethane	124-48-1	0.5	mg/kg		----	----	----	<0.5	----
Bromoform	75-25-2	0.5	mg/kg		----	----	----	<0.5	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		----	----	----	<1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	**2.0**
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	**0.6**
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	----	<0.5	**2.6**
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	----	<0.5	**2.7**
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	**1.0**
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	**1.0**
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	**1.0**
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	**1.0**
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	----	<0.5	**11.9**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH426_2.0	SRT_BH426_4.0	SRT_BH426_5.0	QCA101	QCA102
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-067	ES1829955-069	ES1829955-070	ES1829955-074	ES1829955-075
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	----	<0.5	**1.2**
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	----	**0.6**	**1.5**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	----	**1.2**	**1.8**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	----	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	----	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	----	<100	**130**
C29 - C36 Fraction	----	100	mg/kg		<100	<100	----	<100	**200**
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	----	<50	**330**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	----	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	----	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	----	<100	**250**
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	----	<100	**240**
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	----	<50	**490**
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	----	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	----	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	----	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	**88.1**	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	----	**95.1**	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	----	**68.0**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT_BH426_2.0	SRT_BH426_4.0	SRT_BH426_5.0	QCA101	QCA102
				Client sampling date / time	07-Oct-2018 00:00	07-Oct-2018 00:00	07-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-067	ES1829955-069	ES1829955-070	ES1829955-074	ES1829955-075
					Result	Result	Result	Result	Result
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		----	----	----	93.1	----
Toluene-D8	2037-26-5	0.5	%		----	----	----	102	----
4-Bromofluorobenzene	460-00-4	0.5	%		----	----	----	91.8	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		76.1	78.2	----	78.6	77.6
2-Chlorophenol-D4	93951-73-6	0.5	%		79.5	80.2	----	81.6	77.2
2.4.6-Tribromophenol	118-79-6	0.5	%		55.0	55.7	----	50.0	35.2
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		84.5	85.9	----	87.3	86.9
Anthracene-d10	1719-06-8	0.5	%		90.2	90.3	----	91.3	92.0
4-Terphenyl-d14	1718-51-0	0.5	%		80.5	81.4	----	83.0	82.3
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		99.6	104	----	104	110
Toluene-D8	2037-26-5	0.2	%		99.7	104	----	117	108
4-Bromofluorobenzene	460-00-4	0.2	%		102	103	----	106	105

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	QCA103	Trip Spike 8	Trip Spike TS100	Trip Blank	Trip Blank TB100
			Client sampling date / time	06-Oct-2018 00:00	02-Oct-2018 00:00	02-Oct-2018 00:00	05-Oct-2018 00:00	05-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1829955-076	ES1829955-077	ES1829955-078	ES1829955-079	ES1829955-080
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	8.5	----	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	<2	----	----	----	----
Copper	7440-50-8	5	mg/kg	<5	----	----	----	----
Lead	7439-92-1	5	mg/kg	<5	----	----	----	----
Nickel	7440-02-0	2	mg/kg	<2	----	----	----	----
Zinc	7440-66-6	5	mg/kg	13	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
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	1.3	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	1.4	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	0.6	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	0.6	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	0.6	----	----	----	----
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	5.6	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	0.7	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	1.0	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.3	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	25	18	<10	<10

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QCA103	Trip Spike 8	Trip Spike TS100	Trip Blank	Trip Blank TB100
				Client sampling date / time	06-Oct-2018 00:00	02-Oct-2018 00:00	02-Oct-2018 00:00	05-Oct-2018 00:00	05-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-076	ES1829955-077	ES1829955-078	ES1829955-079	ES1829955-080
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
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	29	21	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	16	12	<10	<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	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	5.9	4.3	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	0.9	0.6	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	4.4	3.2	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	1.9	1.4	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	13.1	9.5	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	6.3	4.6	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		73.2	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		76.7	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		53.7	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		80.0	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		87.6	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		77.5	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		103	106	110	108	117
Toluene-D8	2037-26-5	0.2	%		100	108	115	106	113

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QCA103	Trip Spike 8	Trip Spike TS100	Trip Blank	Trip Blank TB100
				Client sampling date / time	06-Oct-2018 00:00	02-Oct-2018 00:00	02-Oct-2018 00:00	05-Oct-2018 00:00	05-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1829955-076	ES1829955-077	ES1829955-078	ES1829955-079	ES1829955-080
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%		**101**	**104**	**110**	**106**	**114**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	Trip Control Spike	TSC 8	----	----	----
			Client sampling date / time	02-Oct-2018 00:00	02-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES1829955-083	ES1829955-084	--------	--------	--------
				Result	Result	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	**18**	**34**	**----**	**----**	**----**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	**21**	**40**	**----**	**----**	**----**
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg	**12**	**22**	**----**	**----**	**----**
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	**----**	**----**	**----**
Toluene	108-88-3	0.5	mg/kg	**4.3**	**8.3**	**----**	**----**	**----**
Ethylbenzene	100-41-4	0.5	mg/kg	**0.6**	**1.2**	**----**	**----**	**----**
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	**3.1**	**5.8**	**----**	**----**	**----**
ortho-Xylene	95-47-6	0.5	mg/kg	**1.4**	**2.4**	**----**	**----**	**----**
^ **Sum of BTEX**	----	0.2	mg/kg	**9.4**	**17.7**	**----**	**----**	**----**
^ **Total Xylenes**	----	0.5	mg/kg	**4.5**	**8.2**	**----**	**----**	**----**
Naphthalene	91-20-3	1	mg/kg	<1	<1	**----**	**----**	**----**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**107**	**102**	**----**	**----**	**----**
Toluene-D8	2037-26-5	0.2	%	**96.9**	**113**	**----**	**----**	**----**
4-Bromofluorobenzene	460-00-4	0.2	%	**96.3**	**115**	**----**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	RB100	RB103	----	----	----
			Client sampling date / time	06-Oct-2018 00:00	07-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES1829955-071	ES1829955-072	--------	--------	--------
				Result	Result	----	----	----
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
^ **Total Polychlorinated biphenyls**	----	1	µg/L	<1	<1	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	----	----	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	----	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	----	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	----	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	----	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	----	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	----	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	----	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	----	----	----
^ **Total Chlordane (sum)**	----	0.5	µg/L	<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	RB100	RB103	----	----	----
				Client sampling date / time	06-Oct-2018 00:00	07-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1829955-071	ES1829955-072	--------	--------	--------
					Result	Result	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L		<0.5	<0.5	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L		<0.5	<0.5	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L		<0.5	<0.5	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L		<0.5	<0.5	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L		<2.0	<2.0	----	----	----
Dimethoate	60-51-5	0.5	µg/L		<0.5	<0.5	----	----	----
Diazinon	333-41-5	0.5	µg/L		<0.5	<0.5	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L		<0.5	<0.5	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L		<2.0	<2.0	----	----	----
Malathion	121-75-5	0.5	µg/L		<0.5	<0.5	----	----	----
Fenthion	55-38-9	0.5	µg/L		<0.5	<0.5	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L		<0.5	<0.5	----	----	----
Parathion	56-38-2	2.0	µg/L		<2.0	<2.0	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L		<0.5	<0.5	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L		<0.5	<0.5	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L		<0.5	<0.5	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L		<0.5	<0.5	----	----	----
Prothiofos	34643-46-4	0.5	µg/L		<0.5	<0.5	----	----	----
Ethion	563-12-2	0.5	µg/L		<0.5	<0.5	----	----	----
Carbophenothion	786-19-6	0.5	µg/L		<0.5	<0.5	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L		<0.5	<0.5	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	1	µg/L		<1	<1	----	----	----
Toluene	108-88-3	2	µg/L		<2	<2	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	----	----	----
Styrene	100-42-5	5	µg/L		<5	<5	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	----	----	----
Isopropylbenzene	98-82-8	5	µg/L		<5	<5	----	----	----
n-Propylbenzene	103-65-1	5	µg/L		<5	<5	----	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L		<5	<5	----	----	----
sec-Butylbenzene	135-98-8	5	µg/L		<5	<5	----	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L		<5	<5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	RB100	RB103	----	----	----
				Client sampling date / time	06-Oct-2018 00:00	07-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1829955-071	ES1829955-072	--------	--------	--------
					Result	Result	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued									
tert-Butylbenzene	98-06-6	5	µg/L		<5	<5	----	----	----
p-Isopropyltoluene	99-87-6	5	µg/L		<5	<5	----	----	----
n-Butylbenzene	104-51-8	5	µg/L		<5	<5	----	----	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	50	µg/L		<50	<50	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L		<50	<50	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L		<50	<50	----	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L		<50	<50	----	----	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	5	µg/L		<5	<5	----	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	5	µg/L		<5	<5	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L		<5	<5	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L		<5	<5	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L		<5	<5	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L		<5	<5	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	50	µg/L		<50	<50	----	----	----
Chloromethane	74-87-3	50	µg/L		<50	<50	----	----	----
Vinyl chloride	75-01-4	50	µg/L		<50	<50	----	----	----
Bromomethane	74-83-9	50	µg/L		<50	<50	----	----	----
Chloroethane	75-00-3	50	µg/L		<50	<50	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L		<50	<50	----	----	----
1.1-Dichloroethene	75-35-4	5	µg/L		<5	<5	----	----	----
Iodomethane	74-88-4	5	µg/L		<5	<5	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L		<5	<5	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L		<5	<5	----	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L		<5	<5	----	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L		<5	<5	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L		<5	<5	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L		<5	<5	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L		<5	<5	----	----	----
Trichloroethene	79-01-6	5	µg/L		<5	<5	----	----	----
Dibromomethane	74-95-3	5	µg/L		<5	<5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	RB100	RB103	----	----	----
				Client sampling date / time	06-Oct-2018 00:00	07-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1829955-071	ES1829955-072	--------	--------	--------
					Result	Result	----	----	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	<5	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L		<5	<5	----	----	----
Tetrachloroethene	127-18-4	5	µg/L		<5	<5	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	<5	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L		<5	<5	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L		<5	<5	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	<5	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	----	----	----
Pentachloroethane	76-01-7	5	µg/L		<5	<5	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	----	----	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	----	----	----
Bromobenzene	108-86-1	5	µg/L		<5	<5	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	----	----	----
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	----	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	----	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	----	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	----	----	----
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	----	----	----
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	----	----	----
Bromoform	75-25-2	5	µg/L		<5	<5	----	----	----
EP074H: Naphthalene									
Naphthalene	91-20-3	5	µg/L		<5	<5	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	RB100	RB103	----	----	----
				Client sampling date / time	06-Oct-2018 00:00	07-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1829955-071	ES1829955-072	--------	--------	--------
					Result	Result	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	----	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	<0.5	----	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	<0.5	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		**20**	<20	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	<20	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	<100	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	<100	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	----	----	----
Toluene	108-88-3	2	µg/L		<2	<2	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	RB100	RB103	----	----	----
				Client sampling date / time	06-Oct-2018 00:00	07-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1829955-071	ES1829955-072	--------	--------	--------
					Result	Result	----	----	----
EP080: BTEXN - Continued									
^ Total Xylenes	----	2	µg/L		<2	<2	----	----	----
^ Sum of BTEX	----	1	µg/L		<1	<1	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		84.5	100.0	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		86.7	98.5	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		71.4	80.3	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		90.5	98.3	----	----	----
Toluene-D8	2037-26-5	5	%		116	105	----	----	----
4-Bromofluorobenzene	460-00-4	5	%		94.2	98.8	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		25.0	24.1	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		54.1	59.5	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		40.2	92.4	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		68.1	76.9	----	----	----
Anthracene-d10	1719-06-8	1.0	%		82.0	85.0	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		88.4	86.6	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		92.1	100	----	----	----
Toluene-D8	2037-26-5	2	%		117	107	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		91.5	94.6	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	SRT-BH420-0.5 - 06-Oct-2018 00:00	Pale brown sandy soil plus one piece of bonded asbestos cement sheeting approximately 12 x 9 x 2mm.
EA200: Description	SRT_BH408_0.2 - 06-Oct-2018 00:00	Pale brown sandy soil.
EA200: Description	SRT_BH409_0.5 - 06-Oct-2018 00:00	Pale brown sandy soil.
EA200: Description	SRT_BH410_0.2 - 06-Oct-2018 00:00	Mid brown sandy soil.
EA200: Description	SRT_BH411_0.15 - 06-Oct-2018 00:00	Mid brown sandy soil.
EA200: Description	SRT_BH412_0.5 - 06-Oct-2018 00:00	Mid brown sandy soil.
EA200: Description	SRT_BH412_1.0 - 06-Oct-2018 00:00	Mid grey sandy soil.
EA200: Description	SRT_BH416_0.25 - 06-Oct-2018 00:00	Mid grey sandy soil.
EA200: Description	SRT_BH416_1.0 - 06-Oct-2018 00:00	Mid grey sandy soil.
EA200: Description	SRT_BH417_0.5 - 06-Oct-2018 00:00	A collection of crushed building debris.
EA200: Description	SRT_BH421_0.25 - 06-Oct-2018 00:00	A collection of crushed building debris.
EA200: Description	SRT_BH422_0.5 - 07-Oct-2018 00:00	Mid grey sandy soil.
EA200: Description	SRT_BH426_0.1 - 07-Oct-2018 00:00	Pale brown sandy soil with slag debris.
EA200: Description	QCA101 - 06-Oct-2018 00:00	Pale brown sandy soil.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	29	129
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES1829955**

Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: RBonetti@golder.com.au	E-mail	: ALSEnviro.Sydney@alsglobal.com
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9478 3901	Facsimile	: +61-2-8784 8500
Project	: SYDNEY METRO	Page	: 1 of 6
Order number	:	Quote number	: ES2017GOLASS0019 (SY/698/17 C V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Waterloo Station		
Sampler	:		

Dates

Date Samples Received	: 10-Oct-2018 13:00	Issue Date	: 10-Oct-2018
Client Requested Due Date	: 17-Oct-2018	Scheduled Reporting Date	: **17-Oct-2018**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 7	Temperature	: 2.8'c - Ice present
Receipt Detail	:	No. of samples received / analysed	: 83 / 63

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
- **Did not receive sample SRT_BH417_3.0 in green snap lock bag.**
- **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 absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- SPOCAS analysis will be conducted by ALS Brisbane.
- Received extra samples with the following ID's: BH414_0.14 and SRT_BH418-3.0.
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.

Sample Container(s)/Preservation Non-Compliances

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

Method Client sample ID	Sample Container Received	Preferred Sample Container for Analysis
Asbestos Classification and Quantitation per NEPM 2013 : EA200N		
SRT-BH420-0.5	- Snap Lock Bag	- Snap Lock Bag: Separate bag received
SRT_BH416_0.25	- Snap Lock Bag - ACM/Asbestos Grab Bag	- Snap Lock Bag: Separate bag received
SRT_BH416_1.0	- Snap Lock Bag - ACM/Asbestos Grab Bag	- Snap Lock Bag: Separate bag received
SRT_BH426_0.1	- Snap Lock Bag - ACM/Asbestos Grab Bag	- Snap Lock Bag: Separate bag received
QCA101	- Snap Lock Bag - Subsampled by ALS	- Snap Lock Bag: Separate bag received
Asbestos Identification in Soils : EA200		
QCA101	- Snap Lock Bag - Subsampled by ALS	- Snap Lock Bag - ACM/Asbestos Grab Bag
Suspension Peroxide Oxidation-Combined Acidity and Sulphate : EA029		
SRT-BH420-4.0-4.45	- Snap Lock Bag - frozen on receipt	- Snap Lock Bag - frozen
SRT-BH420-5.5-5.95	- Snap Lock Bag - frozen on receipt	- Snap Lock Bag - frozen
Total Phenol by Discrete Analyser : EP035G		
RB100	- Clear Plastic Bottle - Nitric Acid; Unfiltered	- Clear Plastic Bottle - Sulfuric Acid
RB103	- Clear Plastic Bottle - Nitric Acid; Unfiltered	- Clear Plastic Bottle - Sulfuric Acid

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	Client sampling date / time	Client sample ID	SOIL - EA029 SPOCAS	SOIL - EA055-103 Moisture Content	SOIL - EA200N Asbestos in Soils - (<1kg samples ONLY)	SOIL - EP035G (solids) Total Phenol by Discrete Analyser	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - S-12 OC/OP Pesticides	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES1829955-001	06-Oct-2018 00:00	SRT-BH420-0.5		✓	✓	✓	✓	✓	✓
ES1829955-002	06-Oct-2018 00:00	SRT-BH420-1.0		✓					✓
ES1829955-003	06-Oct-2018 00:00	SRT-BH420-2.0		✓					✓
ES1829955-004	06-Oct-2018 00:00	SRT-BH420-3.0	✓						
ES1829955-007	06-Oct-2018 00:00	SRT-BH420-4.0-4.45	✓						
ES1829955-008	06-Oct-2018 00:00	SRT-BH420-5.5-5.95	✓						
ES1829955-010	06-Oct-2018 00:00	SRT_BH408_0.2		✓	✓				✓
ES1829955-011	06-Oct-2018 00:00	SRT_BH408_0.5		✓		✓	✓	✓	✓
ES1829955-013	06-Oct-2018 00:00	SRT_BH408_1.5		✓					
ES1829955-014	06-Oct-2018 00:00	SRT_BH408_2.0		✓					✓
ES1829955-015	06-Oct-2018 00:00	SRT_BH408_3.0	✓	✓					
ES1829955-017	06-Oct-2018 00:00	SRT_BH409_0.5		✓	✓	✓	✓	✓	✓
ES1829955-019	06-Oct-2018 00:00	SRT_BH409_1.5		✓					✓
ES1829955-020	06-Oct-2018 00:00	SRT_BH409_2.0		✓					
ES1829955-021	06-Oct-2018 00:00	SRT_BH409_3.0	✓	✓					✓
ES1829955-022	06-Oct-2018 00:00	SRT_BH409_4.0	✓						
ES1829955-023	06-Oct-2018 00:00	SRT_BH410_0.2		✓	✓				✓
ES1829955-024	06-Oct-2018 00:00	SRT_BH410_0.8		✓		✓	✓	✓	✓

			SOIL - EA029 SPOCAS	SOIL - EA055-103 Moisture Content	SOIL - EA200N Asbestos in Soils - (<1kg samples ONLY)	SOIL - EP035G (solids) Total Phenol by Discrete Analyser	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - S-12 OC/OP Pesticides	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES1829955-026	06-Oct-2018 00:00	SRT_BH410_1.5		✓					✓
ES1829955-028	06-Oct-2018 00:00	SRT_BH410_3.0	✓						
ES1829955-029	06-Oct-2018 00:00	SRT_BH411_0.15			✓				
ES1829955-030	06-Oct-2018 00:00	SRT_BH411_0.5		✓		✓	✓	✓	✓
ES1829955-031	06-Oct-2018 00:00	SRT_BH411_1.0		✓					✓
ES1829955-033	06-Oct-2018 00:00	SRT_BH411_2.0		✓					✓
ES1829955-034	06-Oct-2018 00:00	SRT_BH411_3.0	✓						
ES1829955-035	06-Oct-2018 00:00	SRT_BH412_0.11		✓		✓	✓	✓	
ES1829955-036	06-Oct-2018 00:00	SRT_BH412_0.5		✓	✓				✓
ES1829955-037	06-Oct-2018 00:00	SRT_BH412_1.0		✓	✓	✓	✓	✓	✓
ES1829955-039	06-Oct-2018 00:00	SRT_BH412_2.0		✓					✓
ES1829955-040	06-Oct-2018 00:00	SRT_BH412_3.0	✓						
ES1829955-041	06-Oct-2018 00:00	SRT_BH416_0.25		✓	✓				✓
ES1829955-042	06-Oct-2018 00:00	SRT_BH416_0.5		✓		✓	✓	✓	✓
ES1829955-043	06-Oct-2018 00:00	SRT_BH416_1.0		✓	✓				
ES1829955-044	06-Oct-2018 00:00	SRT_BH416_1.5		✓					✓
ES1829955-046	06-Oct-2018 00:00	SRT_BH416_3.0	✓	✓					✓
ES1829955-048	06-Oct-2018 00:00	SRT_BH417_0.5		✓	✓	✓	✓	✓	✓
ES1829955-049	06-Oct-2018 00:00	SRT_BH417_1.5		✓		✓	✓		✓
ES1829955-050	06-Oct-2018 00:00	SRT_BH417_2.0		✓					
ES1829955-051	06-Oct-2018 00:00	SRT_BH417_3.0		✓					✓
ES1829955-052	06-Oct-2018 00:00	SRT_BH421_0.25		✓	✓			✓	
ES1829955-053	06-Oct-2018 00:00	SRT_BH421_0.5		✓					✓
ES1829955-054	06-Oct-2018 00:00	SRT_BH421_1.0		✓					✓
ES1829955-057	06-Oct-2018 00:00	SRT_BH421_3.0	✓	✓					✓
ES1829955-058	07-Oct-2018 00:00	SRT_BH422_0.5		✓	✓	✓	✓	✓	✓
ES1829955-059	07-Oct-2018 00:00	SRT_BH422_1.0		✓					✓
ES1829955-060	07-Oct-2018 00:00	SRT_BH422_1.5		✓					✓
ES1829955-062	07-Oct-2018 00:00	SRT_BH422_3.0	✓						
ES1829955-063	07-Oct-2018 00:00	SRT_BH426_0.1		✓	✓				✓
ES1829955-064	07-Oct-2018 00:00	SRT_BH426_0.5		✓		✓	✓	✓	
ES1829955-065	07-Oct-2018 00:00	SRT_BH426_1.0		✓		✓	✓		✓
ES1829955-067	07-Oct-2018 00:00	SRT_BH426_2.0		✓					✓
ES1829955-069	07-Oct-2018 00:00	SRT_BH426_4.0	✓	✓					✓
ES1829955-070	07-Oct-2018 00:00	SRT_BH426_5.0	✓						
ES1829955-074	06-Oct-2018 00:00	QCA101		✓	✓	✓	✓	✓	✓
ES1829955-075	06-Oct-2018 00:00	QCA102		✓					✓
ES1829955-076	06-Oct-2018 00:00	QCA103		✓					✓
ES1829955-077	02-Oct-2018 00:00	Trip Spike 8		✓					
ES1829955-078	02-Oct-2018 00:00	Trip Spike TS100		✓					
ES1829955-079	05-Oct-2018 00:00	Trip Blank		✓					

			SOIL - EA029 SPOCAS	SOIL - EA055-103 Moisture Content	SOIL - EA200N Asbestos in Soils - (<1kg samples ONLY)	SOIL - EP035G (solids) Total Phenol by Discrete Analyser	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - S-12 OC/OP Pesticides	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES1829955-080	05-Oct-2018 00:00	Trip Blank TB100		✓					
ES1829955-083	02-Oct-2018 00:00	Trip Control Spike		✓					

Matrix: **SOIL**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	(On Hold) SOIL No analysis requested	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
ES1829955-005	06-Oct-2018 00:00	SRT-BH420-1.0-1.45	✓		
ES1829955-006	06-Oct-2018 00:00	SRT-BH420-2.5-2.95	✓		
ES1829955-009	06-Oct-2018 00:00	SRT-BH420-7.0-7.45	✓		
ES1829955-011	06-Oct-2018 00:00	SRT_BH408_0.5		✓	
ES1829955-012	06-Oct-2018 00:00	SRT_BH408_1.0	✓		
ES1829955-013	06-Oct-2018 00:00	SRT_BH408_1.5		✓	
ES1829955-015	06-Oct-2018 00:00	SRT_BH408_3.0		✓	
ES1829955-016	06-Oct-2018 00:00	SRT_BH409_0.1	✓		
ES1829955-017	06-Oct-2018 00:00	SRT_BH409_0.5		✓	
ES1829955-018	06-Oct-2018 00:00	SRT_BH409_1.0	✓		
ES1829955-020	06-Oct-2018 00:00	SRT_BH409_2.0		✓	
ES1829955-025	06-Oct-2018 00:00	SRT_BH410_1.0	✓		
ES1829955-026	06-Oct-2018 00:00	SRT_BH410_1.5		✓	
ES1829955-027	06-Oct-2018 00:00	SRT_BH410_2.0	✓		
ES1829955-032	06-Oct-2018 00:00	SRT_BH411_1.5	✓		
ES1829955-038	06-Oct-2018 00:00	SRT_BH412_1.5	✓		
ES1829955-041	06-Oct-2018 00:00	SRT_BH416_0.25		✓	
ES1829955-043	06-Oct-2018 00:00	SRT_BH416_1.0		✓	
ES1829955-045	06-Oct-2018 00:00	SRT_BH416_2.0	✓		
ES1829955-046	06-Oct-2018 00:00	SRT_BH416_3.0		✓	
ES1829955-047	06-Oct-2018 00:00	SRT_BH417_0.2	✓		
ES1829955-048	06-Oct-2018 00:00	SRT_BH417_0.5		✓	
ES1829955-050	06-Oct-2018 00:00	SRT_BH417_2.0		✓	
ES1829955-051	06-Oct-2018 00:00	SRT_BH417_3.0		✓	
ES1829955-055	06-Oct-2018 00:00	SRT_BH421_1.5	✓		
ES1829955-056	06-Oct-2018 00:00	SRT_BH421_2.0	✓		
ES1829955-057	06-Oct-2018 00:00	SRT_BH421_3.0			✓
ES1829955-061	07-Oct-2018 00:00	SRT_BH422_2.0	✓		

			(On Hold) SOIL No analysis requested	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
ES1829955-063	07-Oct-2018 00:00	SRT_BH426_0.1		✓	
ES1829955-065	07-Oct-2018 00:00	SRT_BH426_1.0		✓	
ES1829955-066	07-Oct-2018 00:00	SRT_BH426_1.5	✓		
ES1829955-068	07-Oct-2018 00:00	SRT_BH426_3.0	✓		
ES1829955-073	06-Oct-2018 00:00	QCA100	✓		
ES1829955-074	06-Oct-2018 00:00	QCA101		✓	
ES1829955-081	07-Oct-2018 00:00	BH414-0.14	✓		
ES1829955-082	07-Oct-2018 00:00	SRT_BH418-3.0	✓		

Matrix: **SOIL**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	SOIL - S-18 (NO MOIST) TRH(C6-C9)/BTEXN with No Moisture for TBs	SOIL - S-18 TRH(C6-C9)/BTEXN
ES1829955-077	02-Oct-2018 00:00	Trip Spike 8		✓
ES1829955-078	02-Oct-2018 00:00	Trip Spike TS100		✓
ES1829955-079	05-Oct-2018 00:00	Trip Blank	✓	
ES1829955-080	05-Oct-2018 00:00	Trip Blank TB100	✓	
ES1829955-083	02-Oct-2018 00:00	Trip Control Spike		✓

Matrix: **WATER**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	WATER - EP035G Total Phenol by Discrete Analyser	WATER - EP066-PCB-WA Polychlorinated Biphenyls (PCB)	WATER - W-12 OC/OP Pesticides	WATER - W-26T TRH/BTEXN/PAH/Total 8 Metals
ES1829955-071	06-Oct-2018 00:00	RB100	✓	✓	✓	✓
ES1829955-072	07-Oct-2018 00:00	RB103	✓	✓	✓	✓

Matrix: **WATER**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	WATER - EP074 (water) Volatile Organic Compounds
ES1829955-071	06-Oct-2018 00:00	RB100	✓
ES1829955-072	07-Oct-2018 00:00	RB103	✓

Proactive Holding Time Report

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

Matrix: **SOIL**

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

Method Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
				Date	Evaluation	Date	Evaluation
EA029: Suspension Peroxide Oxidation-Combined Acidity and Sulphate							
SRT-BH420-3.0	Snap Lock Bag	07-Oct-2018	05-Jan-2019	10-Oct-2018	×	----	----
SRT-BH420-4.0-4.45	Snap Lock Bag - frozen on recei	07-Oct-2018	05-Jan-2019	10-Oct-2018	×	----	----
SRT-BH420-5.5-5.95	Snap Lock Bag - frozen on recei	07-Oct-2018	05-Jan-2019	10-Oct-2018	×	----	----

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	au_accountspayable@golder.com.au

BARRY HOUSTON

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

RITA BONETTI

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

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES1829955**	Page	: 1 of 45
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: SYDNEY METRO	Date Samples Received	: 10-Oct-2018
Order number	: .	Date Analysis Commenced	: 11-Oct-2018
C-O-C number	: ----	Issue Date	: 17-Oct-2018
Sampler	: ----		
Site	: Waterloo Station		
Quote number	: SY/698/17 C V4		
No. of samples received	: 84		
No. of samples analysed	: 64		

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

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

This Quality Control Report contains the following information:

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

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*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini		Sydney Organics, Smithfield, NSW
Gerrad Morgan	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA029-A: pH Measurements (QC Lot: 1981762)									
EB1824559-001	Anonymous	EA029: pH KCl (23A)	----	0.1	pH Unit	7.7	6.8	12.4	0% - 20%
		EA029: pH OX (23B)	----	0.1	pH Unit	3.1	3.0	3.28	0% - 20%
ES1829899-007	Anonymous	EA029: pH KCl (23A)	----	0.1	pH Unit	6.0	6.3	4.88	0% - 20%
		EA029: pH OX (23B)	----	0.1	pH Unit	6.9	6.9	0.00	0% - 20%
EA029-A: pH Measurements (QC Lot: 1981763)									
ES1829955-028	SRT_BH410_3.0	EA029: pH KCl (23A)	----	0.1	pH Unit	5.9	5.8	1.71	0% - 20%
		EA029: pH OX (23B)	----	0.1	pH Unit	4.5	4.5	0.00	0% - 20%
EA029-B: Acidity Trail (QC Lot: 1981762)									
EB1824559-001	Anonymous	EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	0.188	0.160	16.1	No Limit
		EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	0.188	0.160	16.1	No Limit
		EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	<2	0.00	No Limit
		EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	118	100	16.1	0% - 20%
		EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	118	100	16.1	0% - 20%
ES1829899-007	Anonymous	EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	5	4	0.00	No Limit
		EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	<2	0.00	No Limit
		EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	<2	0.00	No Limit
EA029-B: Acidity Trail (QC Lot: 1981763)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA029-B: Acidity Trail (QC Lot: 1981763) - continued									
ES1829955-028	SRT_BH410_3.0	EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	0.127	0.128	1.32	No Limit
		EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	0.118	0.118	0.00	No Limit
		EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	6	6	0.00	No Limit
		EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	79	80	1.32	0% - 20%
		EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	74	74	0.00	0% - 20%
EA029-C: Sulfur Trail (QC Lot: 1981762)									
EB1824559-001	Anonymous	EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Sulfur (23De)	----	0.02	% S	0.065	0.070	7.55	No Limit
		EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	0.065	0.070	7.55	No Limit
		EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	40	44	7.55	No Limit
ES1829899-007	Anonymous	EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-C: Sulfur Trail (QC Lot: 1981763)									
ES1829955-028	SRT_BH410_3.0	EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-D: Calcium Values (QC Lot: 1981762)									
EB1824559-001	Anonymous	EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	0.032	0.032	0.00	No Limit
		EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	0.042	0.039	5.44	No Limit
		EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	<10	0.00	No Limit
ES1829899-007	Anonymous	EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	0.106	0.111	4.42	No Limit
		EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	0.160	0.177	9.67	No Limit
		EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	0.054	0.066	19.2	No Limit
		EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	0.043	0.052	19.2	No Limit
		EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	27	33	19.2	No Limit
EA029-D: Calcium Values (QC Lot: 1981763)									
ES1829955-028	SRT_BH410_3.0	EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	0.027	0.026	0.00	No Limit
		EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	0.030	0.028	6.65	No Limit
		EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	<0.020	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA029-D: Calcium Values (QC Lot: 1981763) - continued									
ES1829955-028	SRT_BH410_3.0	EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-E: Magnesium Values (QC Lot: 1981762)									
EB1824559-001	Anonymous	EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	<10	0.00	No Limit
ES1829899-007	Anonymous	EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	0.020	0.020	0.00	No Limit
		EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	0.020	0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	0.026	0.027	0.00	No Limit
		EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	16	17	0.00	No Limit
EA029-E: Magnesium Values (QC Lot: 1981763)									
ES1829955-028	SRT_BH410_3.0	EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-F: Excess Acid Neutralising Capacity (QC Lot: 1981762)									
ES1829899-007	Anonymous	EA029: Excess Acid Neutralising Capacity (23Q)	----	0.02	% CaCO3	0.207	0.218	5.44	0% - 50%
		EA029: sulfidic - Excess Acid Neutralising Capacity (s-23Q)	----	0.02	% S	0.066	0.070	5.44	No Limit
		EA029: acidity - Excess Acid Neutralising Capacity (a-23Q)	----	10	mole H+ / t	41	44	5.44	No Limit
EA029-H: Acid Base Accounting (QC Lot: 1981762)									
EB1824559-001	Anonymous	EA029: ANC Fineness Factor	----	0.5	-	1.5	1.5	0.00	No Limit
		EA029: Net Acidity (sulfur units)	----	0.02	% S	0.15	0.13	12.2	No Limit
		EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	0.15	0.13	12.2	No Limit
		EA029: Liming Rate	----	1	kg CaCO3/t	7	6	0.00	No Limit
		EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	7	6	0.00	No Limit
		EA029: Net Acidity (acidity units)	----	10	mole H+ / t	92	81	12.2	No Limit
		EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	92	81	12.2	No Limit
ES1829899-007	Anonymous	EA029: ANC Fineness Factor	----	0.5	-	1.5	1.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA029-H: Acid Base Accounting (QC Lot: 1981762) - continued									
ES1829899-007	Anonymous	EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA029: Liming Rate	----	1	kg CaCO3/t	<1	<1	0.00	No Limit
		EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	<1	0.00	No Limit
		EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	<10	0.00	No Limit
		EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-H: Acid Base Accounting (QC Lot: 1981763)									
ES1829955-028	SRT_BH410_3.0	EA029: ANC Fineness Factor	----	0.5	-	1.5	1.5	0.00	No Limit
		EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA029: Liming Rate	----	1	kg CaCO3/t	<1	<1	0.00	No Limit
		EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	<1	0.00	No Limit
		EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	<10	0.00	No Limit
		EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 1977344)									
ES1829949-003	Anonymous	EA055: Moisture Content	----	0.1	%	13.9	13.1	6.40	0% - 50%
ES1829949-015	Anonymous	EA055: Moisture Content	----	0.1	%	17.7	17.5	0.874	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 1977345)									
ES1829955-014	SRT_BH408_2.0	EA055: Moisture Content	----	0.1	%	4.8	4.5	6.48	No Limit
ES1829955-033	SRT_BH411_2.0	EA055: Moisture Content	----	0.1	%	3.3	3.4	0.00	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 1977346)									
ES1829955-046	SRT_BH416_3.0	EA055: Moisture Content	----	0.1	%	6.2	5.8	5.22	No Limit
ES1829955-060	SRT_BH422_1.5	EA055: Moisture Content	----	0.1	%	13.4	13.8	3.30	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 1982016)									
ES1829955-001	SRT-BH420-0.5	EG005T: Zinc	7440-66-6	5	mg/kg	804	786	2.33	0% - 20%
ES1829955-001	SRT-BH420-0.5	EG005T: Cadmium	7440-43-9	1	mg/kg	2	1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	9	12	30.2	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	8	14	48.9	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	11	<5	78.7	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	76	# 124	48.2	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	618	586	5.34	0% - 20%
ES1829955-024	SRT_BH410_0.8	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	3	3	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	10	67.8	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.00	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 1982017)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005T: Total Metals by ICP-AES (QC Lot: 1982017) - continued									
ES1829955-044	SRT_BH416_1.5	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	7	<5	29.7	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	6	<5	0.00	No Limit
ES1829955-060	SRT_BH422_1.5	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	<2	5	87.9	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	3	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	5	16	104	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	29	# 88	100.0	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	108	# 132	20.2	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1982015)									
ES1829955-001	SRT-BH420-0.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.6	0.6	0.00	No Limit
ES1829955-024	SRT_BH410_0.8	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1982018)									
ES1829955-044	SRT_BH416_1.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1829955-060	SRT_BH422_1.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.1	0.00	No Limit
EP035G: Total Phenol by Discrete Analyser (QC Lot: 1976601)									
ES1829955-001	SRT-BH420-0.5	EP035G: Phenols (Total)	----	1	mg/kg	<1	<1	0.00	No Limit
ES1829955-049	SRT_BH417_1.5	EP035G: Phenols (Total)	----	1	mg/kg	<1	<1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 1975401)									
ES1829955-001	SRT-BH420-0.5	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1829955-058	SRT_BH422_0.5	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1975400)									
ES1829955-001	SRT-BH420-0.5	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1975400) - continued									
ES1829955-001	SRT-BH420-0.5	EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
ES1829955-058	SRT_BH422_0.5	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1975400)									
ES1829955-001	SRT-BH420-0.5	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1975400) - continued									
ES1829955-001	SRT-BH420-0.5	EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
ES1829955-058	SRT_BH422_0.5	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1975831)									
ES1829955-011	SRT_BH408_0.5	EP074: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP074: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1975831) - continued									
ES1829955-011	SRT_BH408_0.5	EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1829955-051	SRT_BH417_3.0	EP074: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP074: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074B: Oxygenated Compounds (QC Lot: 1975831)									
ES1829955-011	SRT_BH408_0.5	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.00	No Limit
ES1829955-051	SRT_BH417_3.0	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.00	No Limit
EP074C: Sulfonated Compounds (QC Lot: 1975831)									
ES1829955-011	SRT_BH408_0.5	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1829955-051	SRT_BH417_3.0	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074D: Fumigants (QC Lot: 1975831)									
ES1829955-011	SRT_BH408_0.5	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1829955-051	SRT_BH417_3.0	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074D: Fumigants (QC Lot: 1975831) - continued									
ES1829955-051	SRT_BH417_3.0	EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 1975831)									
ES1829955-011	SRT_BH408_0.5	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.00	No Limit
ES1829955-051	SRT_BH417_3.0	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074E: Halogenated Aliphatic Compounds (QC Lot: 1975831) - continued									
ES1829955-051	SRT_BH417_3.0	EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 1975831)									
ES1829955-011	SRT_BH408_0.5	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1829955-051	SRT_BH417_3.0	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 1975831)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074G: Trihalomethanes (QC Lot: 1975831) - continued									
ES1829955-011	SRT_BH408_0.5	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1829955-051	SRT_BH417_3.0	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074H: Naphthalene (QC Lot: 1975831)									
ES1829955-011	SRT_BH408_0.5	EP074: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES1829955-051	SRT_BH417_3.0	EP074: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1975399)									
ES1829955-001	SRT-BH420-0.5	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	0.5	0.6	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	1.3	1.1	12.8	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	1.4	1.2	15.6	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	0.6	0.5	20.4	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	0.6	0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	0.8	0.7	16.5	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	0.8	0.6	20.4	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	6.0	5.2	14.3	0% - 50%
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	0.9	0.7	26.4	No Limit
ES1829955-058	SRT_BH422_0.5	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	1.8	2.3	25.3	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	0.7	28.8	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	3.3	5.0	40.7	0% - 50%
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	3.2	5.0	41.9	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1975399) - continued									
ES1829955-058	SRT_BH422_0.5	EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	1.4	2.2	46.1	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	1.2	2.0	47.3	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	1.4	2.4	51.1	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	0.6	1.0	48.9	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	1.4	2.3	51.2	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	0.5	0.9	54.3	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	0.6	1.1	56.3	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	15.4	# 24.9	47.1	0% - 20%
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	1.8	3.0	49.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1975402)									
ES1829955-002	SRT-BH420-1.0	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	0.8	0.7	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	0.9	0.8	18.5	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	0.9	0.7	18.3	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	2.6	2.2	16.7	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1829955-036	SRT_BH412_0.5	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	2.8	3.2	16.8	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	0.8	0.8	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	3.4	3.7	8.34	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1975402) - continued									
ES1829955-036	SRT_BH412_0.5	EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	3.6	3.8	5.44	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	1.2	1.4	7.98	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	1.2	1.3	13.8	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	1.2	1.4	10.9	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	1.2	1.4	13.4	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	0.6	0.6	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	16.0	18.1	12.3	0% - 20%
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	1.4	1.7	18.1	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1975410)									
ES1829925-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1829925-011	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1975410) - continued									
ES1829925-011	Anonymous	EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1975398)									
ES1829955-001	SRT-BH420-0.5	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1829955-058	SRT_BH422_0.5	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1975403)									
ES1829955-002	SRT-BH420-1.0	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1829955-036	SRT_BH412_0.5	EP071: C15 - C28 Fraction	----	100	mg/kg	160	120	30.6	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	140	170	21.2	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1975411)									
ES1829925-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1829925-011	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1975823)									
ES1829955-001	SRT-BH420-0.5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1829955-031	SRT_BH411_1.0	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1975829)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1975829) - continued									
ES1829824-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1829955-067	SRT_BH426_2.0	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1975830)									
ES1829955-011	SRT_BH408_0.5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1829955-051	SRT_BH417_3.0	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1982637)									
ES1830060-024	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1830060-011	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1975398)									
ES1829955-001	SRT-BH420-0.5	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1829955-058	SRT_BH422_0.5	EP071: >C16 - C34 Fraction	----	100	mg/kg	160	120	32.6	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1975403)									
ES1829955-002	SRT-BH420-1.0	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1829955-036	SRT_BH412_0.5	EP071: >C16 - C34 Fraction	----	100	mg/kg	240	240	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	160	200	21.3	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1975411)									
ES1829925-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1829925-011	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1975823)									
ES1829955-001	SRT-BH420-0.5	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1829955-031	SRT_BH411_1.0	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1975829)									
ES1829824-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1829955-067	SRT_BH426_2.0	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1975830)									
ES1829955-011	SRT_BH408_0.5	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1829955-051	SRT_BH417_3.0	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1982637)									
ES1830060-024	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1830060-011	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080: BTEXN (QC Lot: 1975823)									
ES1829955-001	SRT-BH420-0.5	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES1829955-031	SRT_BH411_1.0	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP080: BTEXN (QC Lot: 1975829)									
ES1829824-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES1829955-067	SRT_BH426_2.0	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP080: BTEXN (QC Lot: 1975830)									
ES1829955-011	SRT_BH408_0.5	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080: BTEXN (QC Lot: 1975830) - continued									
ES1829955-051	SRT_BH417_3.0	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP080: BTEXN (QC Lot: 1982637)									
ES1830060-024	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES1830060-011	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 1975434)									
ES1829915-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.0002	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
ES1829915-011	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0005	0.0005	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 1975434)									
ES1829915-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 1975434) - continued									
ES1829915-001	Anonymous	EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.00	No Limit
ES1829915-011	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 1975434)									
ES1829915-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
ES1829915-011	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 1975434) - continued									
ES1829915-011	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 1975434)									
ES1829915-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
ES1829915-011	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020T: Total Metals by ICP-MS (QC Lot: 1978098)									
ES1829923-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
ES1829954-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.001	0.006	126	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1977233)									
ES1829516-060	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1977233) - continued									
ES1829966-007	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1975922)									
ES1829955-072	RB103	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.00	No Limit
ES1829890-001	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.00	No Limit
EP074B: Oxygenated Compounds (QC Lot: 1975922)									
ES1829955-072	RB103	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.00	No Limit
ES1829890-001	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074B: Oxygenated Compounds (QC Lot: 1975922) - continued									
ES1829890-001	Anonymous	EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.00	No Limit
EP074C: Sulfonated Compounds (QC Lot: 1975922)									
ES1829955-072	RB103	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.00	No Limit
ES1829890-001	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.00	No Limit
EP074D: Fumigants (QC Lot: 1975922)									
ES1829955-072	RB103	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.00	No Limit
ES1829890-001	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 1975922)									
ES1829955-072	RB103	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.00	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074E: Halogenated Aliphatic Compounds (QC Lot: 1975922) - continued									
ES1829955-072	RB103	EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.00	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.00	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.00	No Limit
ES1829890-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.00	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.00	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.00	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 1975922)									
ES1829955-072	RB103	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074F: Halogenated Aromatic Compounds (QC Lot: 1975922) - continued									
ES1829955-072	RB103	EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.00	No Limit
ES1829890-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 1975922)									
ES1829955-072	RB103	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.00	No Limit
ES1829890-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.00	No Limit
EP074H: Naphthalene (QC Lot: 1975922)									
ES1829955-072	RB103	EP074: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
ES1829890-001	Anonymous	EP074: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1975921)									
ES1829890-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	150	130	9.10	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1975921)									
ES1829890-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	120	110	9.60	No Limit
EP080: BTEXN (QC Lot: 1975921)									
ES1829890-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit

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

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA029-A: pH Measurements (QCLot: 1981762)								
EA029: pH KCl (23A)	----	0.1	pH Unit	<0.1	4.6 pH Unit	104	70	130
EA029: pH OX (23B)	----	0.1	pH Unit	<0.1	4.3 pH Unit	109	70	130
EA029-A: pH Measurements (QCLot: 1981763)								
EA029: pH KCl (23A)	----	0.1	pH Unit	<0.1	4.6 pH Unit	104	70	130
EA029: pH OX (23B)	----	0.1	pH Unit	<0.1	4.3 pH Unit	112	70	130
EA029-B: Acidity Trail (QCLot: 1981762)								
EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	17.7 mole H+ / t	113	70	130
EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	35.2 mole H+ / t	90.9	70	130
EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	----	----	----	----
EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029-B: Acidity Trail (QCLot: 1981763)								
EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	17.7 mole H+ / t	117	70	130
EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	35.2 mole H+ / t	93.8	70	130
EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	----	----	----	----
EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029-C: Sulfur Trail (QCLot: 1981762)								
EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	0.052 % S	82.5	70	130
EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	0.158 % S	80.7	70	130
EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	----	----	----	----
EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	----	----	----	----
EA029-C: Sulfur Trail (QCLot: 1981763)								
EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	0.052 % S	75.9	70	130
EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	0.158 % S	86.1	70	130
EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	----	----	----	----
EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	----	----	----	----
EA029-D: Calcium Values (QCLot: 1981762)								
EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	<0.020	0.097 % Ca	112	70	130
EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	<0.020	0.22 % Ca	97.7	70	130
EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	----	----	----	----

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EA029-D: Calcium Values (QCLot: 1981762) - continued								
EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	----	----	----	----
EA029-D: Calcium Values (QCLot: 1981763)								
EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	<0.020	0.097 % Ca	114	70	130
EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	<0.020	0.22 % Ca	98.9	70	130
EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	----	----	----	----
EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	----	----	----	----
EA029-E: Magnesium Values (QCLot: 1981762)								
EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	0.25 % Mg	73.5	70	130
EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	0.234 % Mg	77.4	70	130
EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	----	----	----	----
EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	----	----	----	----
EA029-E: Magnesium Values (QCLot: 1981763)								
EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	0.25 % Mg	73.2	70	130
EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	0.234 % Mg	77.5	70	130
EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	----	----	----	----
EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	----	----	----	----
EA029-F: Excess Acid Neutralising Capacity (QCLot: 1981762)								
EA029: Excess Acid Neutralising Capacity (23Q)	----	0.02	% CaCO3	<0.020	----	----	----	----
EA029: acidity - Excess Acid Neutralising Capacity (a-23Q)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Excess Acid Neutralising Capacity (s-23Q)	----	0.02	% S	<0.020	----	----	----	----
EA029-H: Acid Base Accounting (QCLot: 1981762)								
EA029: ANC Fineness Factor	----	0.5	-	<0.5	----	----	----	----
EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate	----	1	kg CaCO3/t	<1	----	----	----	----
EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	----	----	----	----
EA029-H: Acid Base Accounting (QCLot: 1981763)								
EA029: ANC Fineness Factor	----	0.5	-	<0.5	----	----	----	----
EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate	----	1	kg CaCO3/t	<1	----	----	----	----

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EA029-H: Acid Base Accounting (QCLot: 1981763) - continued								
EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	----	----	----	----
EG005T: Total Metals by ICP-AES (QCLot: 1982016)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	106	86	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	106	83	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	109	76	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	109	86	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	105	80	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	113	87	123
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	113	80	122
EG005T: Total Metals by ICP-AES (QCLot: 1982017)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	101	86	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	102	83	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	105	76	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	103	86	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	109	80	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	108	87	123
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	110	80	122
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1982015)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	83.6	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1982018)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	77.5	70	105
EP035G: Total Phenol by Discrete Analyser (QCLot: 1976601)								
EP035G: Phenols (Total)	----	1	mg/kg	<1	5 mg/kg	67.8	60	102
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1975401)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	103	62	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 1975400)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.4	69	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	94.2	65	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	86.4	67	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	89.1	68	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	90.6	65	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	83.4	67	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	90.7	69	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	91.7	62	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	90.0	63	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	93.8	66	116

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 1975400) - continued								
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	88.5	64	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	92.0	66	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	87.3	67	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	105	67	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	95.4	69	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	93.5	69	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	101	56	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	100.0	62	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	89.9	66	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	97.7	64	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	84.7	54	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1975400)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	74.6	59	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	104	62	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	90.0	54	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	95.3	67	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	86.2	70	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	89.6	72	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	79.4	68	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	93.4	68	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	89.1	69	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	91.3	76	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	105	64	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	87.1	70	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	85.5	69	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	89.7	66	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	90.4	68	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	91.3	62	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	98.0	68	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	96.8	65	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	72.3	41	123
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1975831)								
EP074: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	105	71	121
EP074: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	109	65	131
EP074: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	109	72	114
EP074: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	108	70	116
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	93.3	67	113
EP074: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	106	75	115

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1975831) - continued								
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	108	65	117
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	108	66	122
EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	104	68	118
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	106	69	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	103	69	117
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	107	69	115
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	106	66	118
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	105	59	125
EP074B: Oxygenated Compounds (QCLot: 1975831)								
EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	10 mg/kg	102	30	156
EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	10 mg/kg	113	58	136
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	10 mg/kg	102	62	132
EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	10 mg/kg	97.6	54	136
EP074C: Sulfonated Compounds (QCLot: 1975831)								
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	105	54	126
EP074D: Fumigants (QCLot: 1975831)								
EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	113	60	126
EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	101	68	124
EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	101	51	119
EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	99.5	52	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	102	63	115
EP074E: Halogenated Aliphatic Compounds (QCLot: 1975831)								
EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	10 mg/kg	106	30	148
EP074: Chloromethane	74-87-3	5	mg/kg	<5	10 mg/kg	113	41	141
EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	10 mg/kg	107	43	147
EP074: Bromomethane	74-83-9	5	mg/kg	<5	10 mg/kg	97.0	47	141
EP074: Chloroethane	75-00-3	5	mg/kg	<5	10 mg/kg	109	49	143
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	10 mg/kg	107	49	135
EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	110	54	126
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	96.0	43	129
EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	112	64	120
EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	107	67	125
EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	104	69	121
EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	109	65	117
EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	107	65	123
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	108	59	125
EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	97.6	65	125
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	100	70	118

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 1975831) - continued								
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	102	68	118
EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	109	64	126
EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	100	68	122
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	109	67	143
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	99.4	62	122
EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	103	54	128
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	111	55	129
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	103	65	121
EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	106	61	125
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	98.9	20	134
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	82.2	53	129
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	108	50	128
EP074F: Halogenated Aromatic Compounds (QCLot: 1975831)								
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	108	68	116
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	107	70	114
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	114	68	122
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	112	67	123
EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	106	70	116
EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	111	67	117
EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	105	70	114
EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	110	48	122
EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	112	52	122
EP074G: Trihalomethanes (QCLot: 1975831)								
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	101	66	124
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	92.6	61	121
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	103	63	121
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	96.7	60	126
EP074H: Naphthalene (QCLot: 1975831)								
EP074: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	106	67	129
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1975399)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	97.1	77	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	96.9	72	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	100	73	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	98.4	72	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	104	75	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	107	77	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	106	73	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	110	74	128

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1975399) - continued								
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	90.7	69	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	97.7	75	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	86.8	68	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	99.5	74	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	93.9	70	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	75.7	61	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	77.4	62	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	72.6	63	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1975402)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	104	77	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	106	72	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	107	73	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	108	72	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	111	75	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	113	77	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	114	73	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	116	74	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	100	69	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	102	75	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	96.1	68	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	106	74	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	104	70	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	97.2	61	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	98.6	62	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	95.8	63	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1975410)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	110	77	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	113	72	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	114	73	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	114	72	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	119	75	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	121	77	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	122	73	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	125	74	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	106	69	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	109	75	127

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1975410) - continued								
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	98.6	68	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	108	74	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	110	70	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	77.0	61	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	79.6	62	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	69.7	63	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975398)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	109	75	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	111	77	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	113	71	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975403)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	105	75	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	110	77	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	110	71	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975411)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	111	75	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	112	77	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	112	71	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975823)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	74.2	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975829)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	113	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975830)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	112	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1982637)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	82.6	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975398)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	109	77	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	114	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	90.3	63	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975403)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	107	77	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	106	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	100	63	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975411)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	114	77	125

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975411) - continued								
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	108	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	93.5	63	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975823)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	76.3	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975829)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	107	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975830)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	120	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1982637)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	85.3	68	128
EP080: BTEXN (QCLot: 1975823)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	84.2	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	79.7	67	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	76.5	65	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	75.2	66	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	77.0	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	75.8	63	119
EP080: BTEXN (QCLot: 1975829)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	97.7	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	98.2	67	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	98.4	65	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	96.6	66	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	102	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	101	63	119
EP080: BTEXN (QCLot: 1975830)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	114	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	108	67	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	111	65	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	107	66	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	107	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	91.0	63	119
EP080: BTEXN (QCLot: 1982637)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	83.2	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	86.0	67	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	83.5	65	117

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP080: BTEXN (QCLot: 1982637) - continued								
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	86.0	66	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	88.6	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	83.0	63	119
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1975434)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00125 mg/kg	68.8	57	121
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	68.8	55	125
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	69.2	52	126
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	69.6	54	123
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	67.2	55	127
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	65.2	54	125
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1975434)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	61.7	52	128
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	72.4	54	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	70.0	58	127
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	70.0	57	128
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	72.4	60	134
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	70.8	63	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	68.8	55	130
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	70.4	62	130
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	68.8	53	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	60.4	49	129
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	69.2	59	129
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1975434)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	68.8	52	132
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	71.2	65	126
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	65.7	64	126
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	66.0	63	124
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	74.8	58	125
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	70.4	61	130
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	69.6	55	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1975434)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	80.8	54	130
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00125 mg/kg	74.4	61	130
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	82.0	62	130

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1975434) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00125 mg/kg	68.8	60	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 1978098)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.7	82	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	99.3	84	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	94.7	86	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	99.9	83	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	96.2	85	115
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	97.2	84	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	100	79	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1977233)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	92.0	77	111
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1975958)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	89.0	62	107
EP068A: Organochlorine Pesticides (OC) (QCLot: 1975957)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	89.7	65	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	103	58	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	89.4	69	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	91.0	70	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	85.4	69	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	87.3	65	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	86.4	66	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	88.1	67	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	88.1	64	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	93.9	67	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	87.6	63	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	88.6	65	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	94.0	66	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	85.4	65	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	91.6	67	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	92.6	72	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	77.2	67	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	104	65	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	90.4	65	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	102	64	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	92.8	61	114

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1975957)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	76.9	66	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	101	64	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	24.2	20	48
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	81.9	70	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	94.8	71	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	88.3	77	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	78.7	70	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	84.2	68	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	87.3	69	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	90.3	75	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	76.8	67	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	88.0	69	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	87.4	72	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	87.8	68	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	82.2	64	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	91.9	68	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	86.3	74	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	103	66	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	75.6	52	128
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1975922)								
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	105	77	119
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	101	69	129
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	99.6	76	118
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	94.1	77	119
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	88.8	73	119
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	100	79	117
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	94.1	76	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	97.6	69	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	95.8	74	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	99.2	73	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	92.5	74	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	96.7	72	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	83.9	71	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	100	65	123
EP074B: Oxygenated Compounds (QCLot: 1975922)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	82.6	61	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	95.1	74	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	88.8	66	132

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074B: Oxygenated Compounds (QCLot: 1975922) - continued								
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	89.1	65	137
EP074C: Sulfonated Compounds (QCLot: 1975922)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	88.0	73	127
EP074D: Fumigants (QCLot: 1975922)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	92.8	68	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	103	76	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	83.6	62	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	82.9	60	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	102	69	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 1975922)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	81.4	61	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	96.7	67	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	106	69	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	98.6	56	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	100.0	61	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	87.6	69	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	100	70	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	86.4	70	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	95.4	74	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	107	74	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	102	77	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	89.5	67	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	97.2	73	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	102	62	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	92.9	73	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	103	76	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	102	73	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	106	72	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	102	71	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	91.4	72	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	86.1	66	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	86.0	60	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	87.3	71	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	111	70	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	99.4	74	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	83.4	72	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	108	66	136
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	94.4	58	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074F: Halogenated Aromatic Compounds (QCLot: 1975922)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	101	79	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	98.5	76	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	102	73	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	98.4	73	119
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	98.6	75	117
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	103	74	118
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	103	75	117
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	92.8	61	125
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	110	67	123
EP074G: Trihalomethanes (QCLot: 1975922)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	101	72	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	86.9	64	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	104	65	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	103	74	126
EP074H: Naphthalene (QCLot: 1975922)								
EP074: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	97.9	72	122
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1975959)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	70.1	50	94
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	97.0	64	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	100.0	62	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	90.9	64	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	104	63	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	88.9	64	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	92.1	64	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	101	63	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	101	64	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	98.0	63	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	89.3	62	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	100	63	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	93.2	63	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	94.7	60	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	91.0	61	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	90.9	59	118
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975921)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	102	75	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975956)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	81.5	76	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975956) - continued								
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	103	83	109
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	105	75	113
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975921)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	101	75	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975956)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	2500 µg/L	106	76	114
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	3500 µg/L	96.1	81	111
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1500 µg/L	106	77	119
EP080: BTEXN (QCLot: 1975921)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	94.3	70	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	89.6	69	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	95.5	70	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	96.6	69	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	98.5	72	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	99.7	70	120

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005T: Total Metals by ICP-AES (QCLot: 1982016)							
ES1829955-001	SRT-BH420-0.5	EG005T: Arsenic	7440-38-2	50 mg/kg	91.3	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	102	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	112	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	118	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	82.0	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	111	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	# 144	70	130
EG005T: Total Metals by ICP-AES (QCLot: 1982017)							
ES1829955-044	SRT_BH416_1.5	EG005T: Arsenic	7440-38-2	50 mg/kg	108	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	106	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	109	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	106	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	106	70	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 1982017) - continued							
ES1829955-044	SRT_BH416_1.5	EG005T: Nickel	7440-02-0	50 mg/kg	106	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	110	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1982015)							
ES1829955-001	SRT-BH420-0.5	EG035T: Mercury	7439-97-6	5 mg/kg	78.9	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1982018)							
ES1829955-044	SRT_BH416_1.5	EG035T: Mercury	7439-97-6	5 mg/kg	97.9	70	130
EP035G: Total Phenol by Discrete Analyser (QCLot: 1976601)							
ES1829955-001	SRT-BH420-0.5	EP035G: Phenols (Total)	----	4.2 mg/kg	74.8	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1975401)							
ES1829955-001	SRT-BH420-0.5	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	104	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 1975400)							
ES1829955-001	SRT-BH420-0.5	EP068: gamma-BHC	58-89-9	0.5 mg/kg	98.8	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	77.1	70	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	79.6	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	74.8	70	130
		EP068: Endrin	72-20-8	2 mg/kg	91.9	70	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	93.6	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1975400)							
ES1829955-001	SRT-BH420-0.5	EP068: Diazinon	333-41-5	0.5 mg/kg	74.7	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	75.3	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	79.7	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	75.6	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	82.1	70	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1975831)							
ES1829955-011	SRT_BH408_0.5	EP074: Benzene	71-43-2	2.5 mg/kg	115	70	130
		EP074: Toluene	108-88-3	2.5 mg/kg	106	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 1975831)							
ES1829955-011	SRT_BH408_0.5	EP074: 1.1-Dichloroethene	75-35-4	2.5 mg/kg	119	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	105	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 1975831)							
ES1829955-011	SRT_BH408_0.5	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	105	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1975399)							
ES1829955-001	SRT-BH420-0.5	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	104	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	116	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1975402)							

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1975402) - continued							
ES1829955-002	SRT-BH420-1.0	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	104	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	116	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1975410)							
ES1829925-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	107	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	126	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975398)							
ES1829955-001	SRT-BH420-0.5	EP071: C10 - C14 Fraction	----	523 mg/kg	103	73	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	114	53	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	125	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975403)							
ES1829955-002	SRT-BH420-1.0	EP071: C10 - C14 Fraction	----	523 mg/kg	88.6	73	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	98.9	53	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	118	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975411)							
ES1829925-001	Anonymous	EP071: C10 - C14 Fraction	----	523 mg/kg	100	73	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	113	53	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	121	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975823)							
ES1829955-001	SRT-BH420-0.5	EP080: C6 - C9 Fraction	----	32.5 mg/kg	94.5	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975829)							
ES1829824-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	118	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975830)							
ES1829955-011	SRT_BH408_0.5	EP080: C6 - C9 Fraction	----	32.5 mg/kg	110	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1982637)							
ES1830060-024	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	90.9	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975398)							
ES1829955-001	SRT-BH420-0.5	EP071: >C10 - C16 Fraction	----	860 mg/kg	105	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	116	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	108	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975403)							
ES1829955-002	SRT-BH420-1.0	EP071: >C10 - C16 Fraction	----	860 mg/kg	95.4	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	116	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	112	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975411)							
ES1829925-001	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	106	73	137

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975411) - continued							
ES1829925-001	Anonymous	EP071: >C16 - C34 Fraction	----	3223 mg/kg	118	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	119	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975823)							
ES1829955-001	SRT-BH420-0.5	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	99.3	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975829)							
ES1829824-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	108	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975830)							
ES1829955-011	SRT_BH408_0.5	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	116	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1982637)							
ES1830060-024	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	90.6	70	130
EP080: BTEXN (QCLot: 1975823)							
ES1829955-001	SRT-BH420-0.5	EP080: Benzene	71-43-2	2.5 mg/kg	91.6	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	90.8	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	88.9	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	86.6	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	89.6	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	94.1	70	130
EP080: BTEXN (QCLot: 1975829)							
ES1829824-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	85.9	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	87.2	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	90.6	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	89.3	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	93.2	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	84.7	70	130
EP080: BTEXN (QCLot: 1975830)							
ES1829955-011	SRT_BH408_0.5	EP080: Benzene	71-43-2	2.5 mg/kg	110	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	104	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	109	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	106	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	104	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	98.2	70	130
EP080: BTEXN (QCLot: 1982637)							
ES1830060-024	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	84.8	70	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 1982637) - continued							
ES1830060-024	Anonymous	EP080: Toluene	108-88-3	2.5 mg/kg	86.4	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	89.7	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	88.0	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	88.2	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	78.2	70	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1975434)							
ES1829915-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00125 mg/kg	64.0	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00125 mg/kg	75.6	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00125 mg/kg	82.8	50	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00125 mg/kg	83.6	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00125 mg/kg	77.6	50	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.00125 mg/kg	78.4	50	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1975434)							
ES1829915-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	77.2	30	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	85.6	50	130
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	75.2	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	82.4	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	84.4	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	85.6	50	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	87.2	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	81.2	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	75.6	50	130
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	71.6	30	130
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	80.1	30	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1975434)							
ES1829915-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	82.0	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	79.6	30	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	83.2	30	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	74.7	30	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	70.2	30	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	88.4	30	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	76.8	30	130

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Recovery Limits (%): Low	Recovery Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1975434)							
ES1829915-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00125 mg/kg	110	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00125 mg/kg	112	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.00125 mg/kg	116	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00125 mg/kg	87.2	50	130

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 1978098)							
ES1829923-002	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	101	70	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	104	70	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	103	70	130
		EG020A-T: Copper	7440-50-8	1 mg/L	100	70	130
		EG020A-T: Lead	7439-92-1	1 mg/L	106	70	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	102	70	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	100	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1977233)							
ES1829930-001	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	86.0	70	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1975922)							
ES1829890-001	Anonymous	EP074: Benzene	71-43-2	25 µg/L	113	70	130
		EP074: Toluene	108-88-3	25 µg/L	109	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 1975922)							
ES1829890-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	106	70	130
		EP074: Trichloroethene	79-01-6	25 µg/L	101	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 1975922)							
ES1829890-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	106	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1975921)							
ES1829890-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	102	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1975921)							
ES1829890-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	106	70	130
EP080: BTEXN (QCLot: 1975921)							
ES1829890-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	112	70	130
		EP080: Toluene	108-88-3	25 µg/L	105	70	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	99.2	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	94.3	70	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	99.2	70	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080: BTEXN (QCLot: 1975921) - continued							
ES1829890-001	Anonymous	EP080: Naphthalene	91-20-3	25 µg/L	95.4	70	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES1829955**	Page	: 1 of 26
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Telephone	: +61-2-8784 8555
Project	: SYDNEY METRO	Date Samples Received	: 10-Oct-2018
Site	: Waterloo Station	Issue Date	: 17-Oct-2018
Sampler	: ----	No. of samples received	: 84
Order number	: .	No. of samples analysed	: 64

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

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

Outliers : Frequency of Quality Control Samples

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

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EG005T: Total Metals by ICP-AES	ES1829955--001	SRT-BH420-0.5	**Copper**	7440-50-8	48.2 %	0% - 20%	**RPD exceeds LOR based limits**
EG005T: Total Metals by ICP-AES	ES1829955--060	SRT_BH422_1.5	**Lead**	7439-92-1	100.0 %	0% - 50%	**RPD exceeds LOR based limits**
EG005T: Total Metals by ICP-AES	ES1829955--060	SRT_BH422_1.5	**Zinc**	7440-66-6	20.2 %	0% - 20%	**RPD exceeds LOR based limits**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	ES1829955--058	SRT_BH422_0.5	**Sum of polycyclic aromatic hydrocarbons**	----	47.1 %	0% - 20%	**RPD exceeds LOR based limits**
Matrix Spike (MS) Recoveries							
EG005T: Total Metals by ICP-AES	ES1829955--001	SRT-BH420-0.5	**Zinc**	7440-66-6	144 %	70-130%	**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							
EP075(SIM)S: Phenolic Compound Surrogates	ES1829955-036	SRT_BH412_0.5	**2-Chlorophenol-D4**	93951-73-6	63.0 %	66-122 %	**Recovery less than lower data quality objective**
EP075(SIM)S: Phenolic Compound Surrogates	ES1829955-036	SRT_BH412_0.5	**2.4.6-Tribromophenol**	118-79-6	27.0 %	40-138 %	**Recovery less than lower data quality objective**
EP075(SIM)S: Phenolic Compound Surrogates	ES1829955-075	QCA102	**2.4.6-Tribromophenol**	118-79-6	35.2 %	40-138 %	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA029-A: pH Measurements						
Snap Lock Bag						
SRT-BH420-3.0	16-Oct-2018	07-Oct-2018	**9**	----	----	----
Snap Lock Bag - frozen on receipt						
SRT-BH420-4.0-4.45, SRT-BH420-5.5-5.95	16-Oct-2018	07-Oct-2018	**9**	----	----	----
EA029-B: Acidity Trail						
Snap Lock Bag						
SRT-BH420-3.0	16-Oct-2018	07-Oct-2018	**9**	----	----	----
Snap Lock Bag - frozen on receipt						
SRT-BH420-4.0-4.45, SRT-BH420-5.5-5.95	16-Oct-2018	07-Oct-2018	**9**	----	----	----
EA029-C: Sulfur Trail						
Snap Lock Bag						
SRT-BH420-3.0	16-Oct-2018	07-Oct-2018	**9**	----	----	----

Matrix: **SOIL**

Method / Container / Client Sample ID(s)		Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA029-C: Sulfur Trail - Analysis Holding Time Compliance							
Snap Lock Bag - frozen on receipt							
SRT-BH420-4.0-4.45,	SRT-BH420-5.5-5.95	16-Oct-2018	07-Oct-2018	9	----	----	----
EA029-D: Calcium Values							
Snap Lock Bag							
SRT-BH420-3.0		16-Oct-2018	07-Oct-2018	9	----	----	----
Snap Lock Bag - frozen on receipt							
SRT-BH420-4.0-4.45,	SRT-BH420-5.5-5.95	16-Oct-2018	07-Oct-2018	9	----	----	----
EA029-E: Magnesium Values							
Snap Lock Bag							
SRT-BH420-3.0		16-Oct-2018	07-Oct-2018	9	----	----	----
Snap Lock Bag - frozen on receipt							
SRT-BH420-4.0-4.45,	SRT-BH420-5.5-5.95	16-Oct-2018	07-Oct-2018	9	----	----	----
EA029-F: Excess Acid Neutralising Capacity							
Snap Lock Bag							
SRT-BH420-3.0		16-Oct-2018	07-Oct-2018	9	----	----	----
Snap Lock Bag - frozen on receipt							
SRT-BH420-4.0-4.45,	SRT-BH420-5.5-5.95	16-Oct-2018	07-Oct-2018	9	----	----	----
EA029-G: Retained Acidity							
Snap Lock Bag							
SRT-BH420-3.0		16-Oct-2018	07-Oct-2018	9	----	----	----
Snap Lock Bag - frozen on receipt							
SRT-BH420-4.0-4.45,	SRT-BH420-5.5-5.95	16-Oct-2018	07-Oct-2018	9	----	----	----
EA029-H: Acid Base Accounting							
Snap Lock Bag							
SRT-BH420-3.0		16-Oct-2018	07-Oct-2018	9	----	----	----
Snap Lock Bag - frozen on receipt							
SRT-BH420-4.0-4.45,	SRT-BH420-5.5-5.95	16-Oct-2018	07-Oct-2018	9	----	----	----

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Moisture Content	6	62	9.68	10.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP) - Continued					
Polychlorinated Biphenyls (PCB)	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	13	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	13	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*
EA029-A: pH Measurements								
Snap Lock Bag (EA029)								
SRT-BH420-3.0		**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt (EA029)								
SRT-BH420-4.0-4.45,	SRT-BH420-5.5-5.95	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)								
SRT_BH408_3.0,	SRT_BH409_3.0,	**06-Oct-2018**	**16-Oct-2018**	01-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
SRT_BH409_4.0,	SRT_BH410_3.0,							
SRT_BH411_3.0,	SRT_BH412_3.0,							
SRT_BH416_3.0,	SRT_BH421_3.0							
Snap Lock Bag - frozen on receipt at ALS (EA029)								
SRT_BH422_3.0,	SRT_BH426_4.0,	**07-Oct-2018**	**16-Oct-2018**	02-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
SRT_BH426_5.0								

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
EA029-B: Acidity Trail							
Snap Lock Bag (EA029)							
SRT-BH420-3.0	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt (EA029)							
SRT-BH420-4.0-4.45, SRT-BH420-5.5-5.95	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH408_3.0, SRT_BH409_3.0, SRT_BH409_4.0, SRT_BH410_3.0, SRT_BH411_3.0, SRT_BH412_3.0, SRT_BH416_3.0, SRT_BH421_3.0	**06-Oct-2018**	**16-Oct-2018**	01-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH422_3.0, SRT_BH426_4.0, SRT_BH426_5.0	**07-Oct-2018**	**16-Oct-2018**	02-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
EA029-C: Sulfur Trail							
Snap Lock Bag (EA029)							
SRT-BH420-3.0	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt (EA029)							
SRT-BH420-4.0-4.45, SRT-BH420-5.5-5.95	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH408_3.0, SRT_BH409_3.0, SRT_BH409_4.0, SRT_BH410_3.0, SRT_BH411_3.0, SRT_BH412_3.0, SRT_BH416_3.0, SRT_BH421_3.0	**06-Oct-2018**	**16-Oct-2018**	01-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH422_3.0, SRT_BH426_4.0, SRT_BH426_5.0	**07-Oct-2018**	**16-Oct-2018**	02-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
EA029-D: Calcium Values							
Snap Lock Bag (EA029)							
SRT-BH420-3.0	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt (EA029)							
SRT-BH420-4.0-4.45, SRT-BH420-5.5-5.95	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH408_3.0, SRT_BH409_3.0, SRT_BH409_4.0, SRT_BH410_3.0, SRT_BH411_3.0, SRT_BH412_3.0, SRT_BH416_3.0, SRT_BH421_3.0	**06-Oct-2018**	**16-Oct-2018**	01-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH422_3.0, SRT_BH426_4.0, SRT_BH426_5.0	**07-Oct-2018**	**16-Oct-2018**	02-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓

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
EA029-E: Magnesium Values							
Snap Lock Bag (EA029)							
SRT-BH420-3.0	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt (EA029)							
SRT-BH420-4.0-4.45, SRT-BH420-5.5-5.95	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH408_3.0, SRT_BH409_3.0, SRT_BH409_4.0, SRT_BH410_3.0, SRT_BH411_3.0, SRT_BH412_3.0, SRT_BH416_3.0, SRT_BH421_3.0	**06-Oct-2018**	**16-Oct-2018**	01-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH422_3.0, SRT_BH426_4.0, SRT_BH426_5.0	**07-Oct-2018**	**16-Oct-2018**	02-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
EA029-F: Excess Acid Neutralising Capacity							
Snap Lock Bag (EA029)							
SRT-BH420-3.0	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt (EA029)							
SRT-BH420-4.0-4.45, SRT-BH420-5.5-5.95	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH408_3.0, SRT_BH409_3.0, SRT_BH409_4.0, SRT_BH410_3.0, SRT_BH411_3.0, SRT_BH412_3.0, SRT_BH416_3.0, SRT_BH421_3.0	**06-Oct-2018**	**16-Oct-2018**	01-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH422_3.0, SRT_BH426_4.0, SRT_BH426_5.0	**07-Oct-2018**	**16-Oct-2018**	02-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
EA029-G: Retained Acidity							
Snap Lock Bag (EA029)							
SRT-BH420-3.0	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt (EA029)							
SRT-BH420-4.0-4.45, SRT-BH420-5.5-5.95	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH408_3.0, SRT_BH409_3.0, SRT_BH409_4.0, SRT_BH410_3.0, SRT_BH411_3.0, SRT_BH412_3.0, SRT_BH416_3.0, SRT_BH421_3.0	**06-Oct-2018**	**16-Oct-2018**	01-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH422_3.0, SRT_BH426_4.0, SRT_BH426_5.0	**07-Oct-2018**	**16-Oct-2018**	02-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓

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
EA029-H: Acid Base Accounting							
Snap Lock Bag (EA029)							
SRT-BH420-3.0	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt (EA029)							
SRT-BH420-4.0-4.45, SRT-BH420-5.5-5.95	**06-Oct-2018**	**16-Oct-2018**	07-Oct-2018	×	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH408_3.0, SRT_BH409_3.0, SRT_BH409_4.0, SRT_BH410_3.0, SRT_BH411_3.0, SRT_BH412_3.0, SRT_BH416_3.0, SRT_BH421_3.0	**06-Oct-2018**	**16-Oct-2018**	01-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
Snap Lock Bag - frozen on receipt at ALS (EA029)							
SRT_BH422_3.0, SRT_BH426_4.0, SRT_BH426_5.0	**07-Oct-2018**	**16-Oct-2018**	02-Jul-2021	✓	**16-Oct-2018**	14-Jan-2019	✓
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
SRT-BH420-0.5, SRT-BH420-1.0, SRT-BH420-2.0, SRT_BH408_0.2, SRT_BH408_0.5, SRT_BH408_1.5, SRT_BH408_2.0, SRT_BH408_3.0, SRT_BH409_0.5, SRT_BH409_1.5, SRT_BH409_2.0, SRT_BH409_3.0, SRT_BH410_0.2, SRT_BH410_0.8, SRT_BH410_1.5, SRT_BH411_0.5, QCA101, SRT_BH411_1.0, SRT_BH411_2.0, SRT_BH412_0.11, SRT_BH412_0.5, SRT_BH412_1.0, SRT_BH412_2.0, SRT_BH416_0.25, SRT_BH416_0.5, SRT_BH416_1.0, SRT_BH416_1.5, SRT_BH416_3.0, SRT_BH417_0.5, SRT_BH417_1.5, SRT_BH417_2.0, SRT_BH417_3.0, SRT_BH421_0.25, QCA102, SRT_BH421_0.5, SRT_BH421_1.0, SRT_BH421_3.0, QCA103	**06-Oct-2018**	**----**	----	----	**11-Oct-2018**	20-Oct-2018	✓
Soil Glass Jar - Unpreserved (EA055)							
SRT_BH422_0.5, SRT_BH422_1.0, SRT_BH422_1.5, SRT_BH426_0.1, SRT_BH426_0.5, SRT_BH426_1.0, SRT_BH426_2.0, SRT_BH426_4.0	**07-Oct-2018**	**----**	----	----	**11-Oct-2018**	21-Oct-2018	✓

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
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag (EA200)							
SRT-BH420-0.5	**06-Oct-2018**	**----**	----	----	**15-Oct-2018**	04-Apr-2019	✓
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200)							
SRT_BH416_0.25, SRT_BH416_1.0	**06-Oct-2018**	**----**	----	----	**15-Oct-2018**	04-Apr-2019	✓
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200)							
SRT_BH426_0.1	**07-Oct-2018**	**----**	----	----	**15-Oct-2018**	05-Apr-2019	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
SRT_BH408_0.2, SRT_BH409_0.5, SRT_BH410_0.2, SRT_BH411_0.15, SRT_BH412_0.5, SRT_BH412_1.0, SRT_BH417_0.5, SRT_BH421_0.25	**06-Oct-2018**	**----**	----	----	**15-Oct-2018**	04-Apr-2019	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
SRT_BH422_0.5	**07-Oct-2018**	**----**	----	----	**15-Oct-2018**	05-Apr-2019	✓
Snap Lock Bag - Subsampled by ALS (EA200)							
QCA101	**06-Oct-2018**	**----**	----	----	**15-Oct-2018**	04-Apr-2019	✓
EA200N: Asbestos Quantification (non-NATA)							
Snap Lock Bag (EA200N)							
SRT-BH420-0.5	**06-Oct-2018**	**----**	----	----	**15-Oct-2018**	04-Apr-2019	✓
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200N)							
SRT_BH416_0.25, SRT_BH416_1.0	**06-Oct-2018**	**----**	----	----	**15-Oct-2018**	04-Apr-2019	✓
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200N)							
SRT_BH426_0.1	**07-Oct-2018**	**----**	----	----	**15-Oct-2018**	05-Apr-2019	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200N)							
SRT_BH408_0.2, SRT_BH409_0.5, SRT_BH410_0.2, SRT_BH411_0.15, SRT_BH412_0.5, SRT_BH412_1.0, SRT_BH417_0.5, SRT_BH421_0.25	**06-Oct-2018**	**----**	----	----	**15-Oct-2018**	04-Apr-2019	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200N)							
SRT_BH422_0.5	**07-Oct-2018**	**----**	----	----	**15-Oct-2018**	05-Apr-2019	✓
Snap Lock Bag - Subsampled by ALS (EA200N)							
QCA101	**06-Oct-2018**	**----**	----	----	**15-Oct-2018**	04-Apr-2019	✓

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
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
SRT-BH420-0.5, SRT-BH420-1.0, SRT-BH420-2.0, SRT_BH408_0.2, SRT_BH408_0.5, SRT_BH408_2.0, SRT_BH409_0.5, SRT_BH409_1.5, SRT_BH409_3.0, SRT_BH410_0.2, SRT_BH410_0.8, SRT_BH410_1.5, SRT_BH411_0.5, SRT_BH411_1.0, SRT_BH411_2.0, SRT_BH412_0.5, QCA101, SRT_BH412_1.0, SRT_BH412_2.0, SRT_BH416_0.25, SRT_BH416_0.5, SRT_BH416_1.5, SRT_BH416_3.0, SRT_BH417_0.5, SRT_BH417_1.5, SRT_BH417_3.0, SRT_BH421_0.5, SRT_BH421_1.0, SRT_BH421_3.0, QCA102, QCA103	**06-Oct-2018**	**15-Oct-2018**	04-Apr-2019	✓	**15-Oct-2018**	04-Apr-2019	✓
Soil Glass Jar - Unpreserved (EG005T)							
SRT_BH422_0.5, SRT_BH422_1.0, SRT_BH422_1.5, SRT_BH426_0.1, SRT_BH426_1.0, SRT_BH426_2.0, SRT_BH426_4.0	**07-Oct-2018**	**15-Oct-2018**	05-Apr-2019	✓	**15-Oct-2018**	05-Apr-2019	✓

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
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
SRT-BH420-0.5, SRT-BH420-1.0, SRT-BH420-2.0, SRT_BH408_0.2, SRT_BH408_0.5, SRT_BH408_2.0, SRT_BH409_0.5, SRT_BH409_1.5, SRT_BH409_3.0, SRT_BH410_0.2, SRT_BH410_0.8, SRT_BH410_1.5, SRT_BH411_0.5, SRT_BH411_1.0, SRT_BH411_2.0, SRT_BH412_0.5, QCA101, SRT_BH412_1.0, SRT_BH412_2.0, SRT_BH416_0.25, SRT_BH416_0.5, SRT_BH416_1.5, SRT_BH416_3.0, SRT_BH417_0.5, SRT_BH417_1.5, SRT_BH417_3.0, SRT_BH421_0.5, SRT_BH421_1.0, SRT_BH421_3.0, QCA102, QCA103	**06-Oct-2018**	**15-Oct-2018**	03-Nov-2018	✓	**16-Oct-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EG035T)							
SRT_BH422_0.5, SRT_BH422_1.0, SRT_BH422_1.5, SRT_BH426_0.1, SRT_BH426_1.0, SRT_BH426_2.0, SRT_BH426_4.0	**07-Oct-2018**	**15-Oct-2018**	04-Nov-2018	✓	**16-Oct-2018**	04-Nov-2018	✓
EP035G: Total Phenol by Discrete Analyser							
Soil Glass Jar - Unpreserved (EP035G)							
SRT-BH420-0.5, SRT_BH408_0.5, SRT_BH409_0.5, SRT_BH410_0.8, SRT_BH411_0.5, SRT_BH412_0.11, SRT_BH412_1.0, SRT_BH416_0.5, SRT_BH417_0.5, SRT_BH417_1.5, QCA101	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP035G)							
SRT_BH422_0.5, SRT_BH426_0.5, SRT_BH426_1.0	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓

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
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066)								
SRT-BH420-0.5,	SRT_BH408_0.5,	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
SRT_BH409_0.5,	SRT_BH410_0.8,							
SRT_BH411_0.5,	SRT_BH412_0.11,							
SRT_BH412_1.0,	SRT_BH416_0.5,							
SRT_BH417_0.5,	SRT_BH417_1.5,							
QCA101								
Soil Glass Jar - Unpreserved (EP066)								
SRT_BH422_0.5,	SRT_BH426_0.5,	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
SRT_BH426_1.0								
EP068A: Organochlorine Pesticides (OC)								
Soil Glass Jar - Unpreserved (EP068)								
SRT-BH420-0.5,	SRT_BH408_0.5,	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
SRT_BH409_0.5,	SRT_BH410_0.8,							
SRT_BH411_0.5,	SRT_BH412_0.11,							
SRT_BH412_1.0,	SRT_BH416_0.5,							
SRT_BH417_0.5,	SRT_BH421_0.25,							
QCA101								
Soil Glass Jar - Unpreserved (EP068)								
SRT_BH422_0.5,	SRT_BH426_0.5	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
EP068B: Organophosphorus Pesticides (OP)								
Soil Glass Jar - Unpreserved (EP068)								
SRT-BH420-0.5,	SRT_BH408_0.5,	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
SRT_BH409_0.5,	SRT_BH410_0.8,							
SRT_BH411_0.5,	SRT_BH412_0.11,							
SRT_BH412_1.0,	SRT_BH416_0.5,							
SRT_BH417_0.5,	SRT_BH421_0.25,							
QCA101								
Soil Glass Jar - Unpreserved (EP068)								
SRT_BH422_0.5,	SRT_BH426_0.5	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
EP074A: Monocyclic Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH408_0.5,	SRT_BH408_1.5,	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	13-Oct-2018	✓
SRT_BH408_3.0,	SRT_BH409_0.5,							
SRT_BH409_2.0,	SRT_BH410_1.5,							
SRT_BH416_0.25,	SRT_BH416_1.0,							
SRT_BH416_3.0,	SRT_BH417_0.5,							
SRT_BH417_2.0,	SRT_BH417_3.0,							
QCA101								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH426_0.1,	SRT_BH426_1.0	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	14-Oct-2018	✓

Matrix: **SOIL**

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Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074B: Oxygenated Compounds								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH408_0.5,	SRT_BH408_1.5,	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	13-Oct-2018	✓
SRT_BH408_3.0,	SRT_BH409_0.5,							
SRT_BH409_2.0,	SRT_BH410_1.5,							
SRT_BH416_0.25,	SRT_BH416_1.0,							
SRT_BH416_3.0,	SRT_BH417_0.5,							
SRT_BH417_2.0,	SRT_BH417_3.0,							
QCA101								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH426_0.1,	SRT_BH426_1.0	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	14-Oct-2018	✓
EP074C: Sulfonated Compounds								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH408_0.5,	SRT_BH408_1.5,	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	13-Oct-2018	✓
SRT_BH408_3.0,	SRT_BH409_0.5,							
SRT_BH409_2.0,	SRT_BH410_1.5,							
SRT_BH416_0.25,	SRT_BH416_1.0,							
SRT_BH416_3.0,	SRT_BH417_0.5,							
SRT_BH417_2.0,	SRT_BH417_3.0,							
QCA101								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH426_0.1,	SRT_BH426_1.0	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	14-Oct-2018	✓
EP074D: Fumigants								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH408_0.5,	SRT_BH408_1.5,	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	13-Oct-2018	✓
SRT_BH408_3.0,	SRT_BH409_0.5,							
SRT_BH409_2.0,	SRT_BH410_1.5,							
SRT_BH416_0.25,	SRT_BH416_1.0,							
SRT_BH416_3.0,	SRT_BH417_0.5,							
SRT_BH417_2.0,	SRT_BH417_3.0,							
QCA101								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH426_0.1,	SRT_BH426_1.0	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	14-Oct-2018	✓

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
EP074E: Halogenated Aliphatic Compounds								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH408_0.5,	SRT_BH408_1.5,	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	13-Oct-2018	✓
SRT_BH408_3.0,	SRT_BH409_0.5,							
SRT_BH409_2.0,	SRT_BH410_1.5,							
SRT_BH416_0.25,	SRT_BH416_1.0,							
SRT_BH416_3.0,	SRT_BH417_0.5,							
SRT_BH417_2.0,	SRT_BH417_3.0,							
QCA101								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH426_0.1,	SRT_BH426_1.0	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	14-Oct-2018	✓
EP074F: Halogenated Aromatic Compounds								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH408_0.5,	SRT_BH408_1.5,	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	13-Oct-2018	✓
SRT_BH408_3.0,	SRT_BH409_0.5,							
SRT_BH409_2.0,	SRT_BH410_1.5,							
SRT_BH416_0.25,	SRT_BH416_1.0,							
SRT_BH416_3.0,	SRT_BH417_0.5,							
SRT_BH417_2.0,	SRT_BH417_3.0,							
QCA101								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH426_0.1,	SRT_BH426_1.0	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	14-Oct-2018	✓
EP074G: Trihalomethanes								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH408_0.5,	SRT_BH408_1.5,	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	13-Oct-2018	✓
SRT_BH408_3.0,	SRT_BH409_0.5,							
SRT_BH409_2.0,	SRT_BH410_1.5,							
SRT_BH416_0.25,	SRT_BH416_1.0,							
SRT_BH416_3.0,	SRT_BH417_0.5,							
SRT_BH417_2.0,	SRT_BH417_3.0,							
QCA101								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH426_0.1,	SRT_BH426_1.0	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	14-Oct-2018	✓

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
EP074H: Naphthalene								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH408_0.5,	SRT_BH408_1.5,	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	13-Oct-2018	✓
SRT_BH408_3.0,	SRT_BH409_0.5,							
SRT_BH409_2.0,	SRT_BH410_1.5,							
SRT_BH416_0.25,	SRT_BH416_1.0,							
SRT_BH416_3.0,	SRT_BH417_0.5,							
SRT_BH417_2.0,	SRT_BH417_3.0,							
QCA101								
Soil Glass Jar - Unpreserved (EP074)								
SRT_BH426_0.1,	SRT_BH426_1.0	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	14-Oct-2018	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM))								
SRT-BH420-0.5,	SRT_BH408_0.5,	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Nov-2018	✓
SRT_BH409_0.5,	SRT_BH410_0.8,							
SRT_BH411_0.5,	SRT_BH412_1.0,							
SRT_BH416_0.5,	SRT_BH417_0.5,							
SRT_BH417_1.5,	QCA101,							
QCA102,	QCA103							
Soil Glass Jar - Unpreserved (EP075(SIM))								
SRT-BH420-1.0,	SRT-BH420-2.0,	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
SRT_BH408_0.2,	SRT_BH408_2.0,							
SRT_BH409_1.5,	SRT_BH409_3.0,							
SRT_BH410_0.2,	SRT_BH410_1.5,							
SRT_BH411_1.0,	SRT_BH411_2.0,							
SRT_BH412_0.5,	SRT_BH412_2.0,							
SRT_BH416_0.25,	SRT_BH416_1.5,							
SRT_BH416_3.0,	SRT_BH417_3.0,							
SRT_BH421_0.5,	SRT_BH421_1.0,							
SRT_BH421_3.0								
Soil Glass Jar - Unpreserved (EP075(SIM))								
SRT_BH422_0.5,	SRT_BH426_0.1,	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	20-Nov-2018	✓
SRT_BH426_1.0,	SRT_BH426_2.0,							
SRT_BH426_4.0								
Soil Glass Jar - Unpreserved (EP075(SIM))								
SRT_BH422_1.0,	SRT_BH422_1.5	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓

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
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) Trip Spike 8, Trip Spike TS100, Trip Control Spike	**02-Oct-2018**	**11-Oct-2018**	16-Oct-2018	✓	**12-Oct-2018**	16-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080) TSC 8	**02-Oct-2018**	**15-Oct-2018**	16-Oct-2018	✓	**15-Oct-2018**	16-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080) Trip Blank, Trip Blank TB100	**05-Oct-2018**	**11-Oct-2018**	19-Oct-2018	✓	**12-Oct-2018**	19-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080) SRT-BH420-0.5, SRT-BH420-1.0, SRT-BH420-2.0, SRT_BH408_0.2, SRT_BH408_0.5, SRT_BH408_2.0, SRT_BH409_0.5, SRT_BH409_1.5, SRT_BH409_3.0, SRT_BH410_0.2, SRT_BH410_0.8, SRT_BH410_1.5, SRT_BH411_0.5, SRT_BH411_1.0, SRT_BH411_2.0, SRT_BH412_0.5, QCA101, SRT_BH412_1.0, SRT_BH412_2.0, SRT_BH416_0.25, SRT_BH416_0.5, SRT_BH416_1.5, SRT_BH416_3.0, SRT_BH417_0.5, SRT_BH417_1.5, SRT_BH417_3.0, SRT_BH421_0.5, SRT_BH421_1.0, SRT_BH421_3.0, QCA102, QCA103	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**12-Oct-2018**	20-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP071) SRT-BH420-1.0, SRT-BH420-2.0, SRT_BH408_0.2, SRT_BH408_2.0, SRT_BH409_1.5, SRT_BH409_3.0, SRT_BH410_0.2, SRT_BH410_1.5, SRT_BH411_1.0, SRT_BH411_2.0, SRT_BH412_0.5, SRT_BH412_2.0, SRT_BH416_0.25, SRT_BH416_1.5, SRT_BH416_3.0, SRT_BH417_3.0, SRT_BH421_0.5, SRT_BH421_1.0, SRT_BH421_3.0	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**15-Oct-2018**	20-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP080) SRT_BH422_0.5, SRT_BH422_1.0, SRT_BH422_1.5, SRT_BH426_0.1, SRT_BH426_1.0, SRT_BH426_2.0, SRT_BH426_4.0	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**12-Oct-2018**	21-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP071) SRT_BH422_1.0, SRT_BH422_1.5	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**15-Oct-2018**	20-Nov-2018	✓

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
Trip Spike 8, Trip Spike TS100, Trip Control Spike	**02-Oct-2018**	**11-Oct-2018**	16-Oct-2018	✓	**12-Oct-2018**	16-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080)							
TSC 8	**02-Oct-2018**	**15-Oct-2018**	16-Oct-2018	✓	**15-Oct-2018**	16-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080)							
Trip Blank, Trip Blank TB100	**05-Oct-2018**	**11-Oct-2018**	19-Oct-2018	✓	**12-Oct-2018**	19-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080)							
SRT-BH420-0.5, SRT-BH420-1.0, SRT-BH420-2.0, SRT_BH408_0.2, SRT_BH408_0.5, SRT_BH408_2.0, SRT_BH409_0.5, SRT_BH409_1.5, SRT_BH409_3.0, SRT_BH410_0.2, SRT_BH410_0.8, SRT_BH410_1.5, SRT_BH411_0.5, SRT_BH411_1.0, SRT_BH411_2.0, SRT_BH412_0.5, QCA101, SRT_BH412_1.0, SRT_BH412_2.0, SRT_BH416_0.25, SRT_BH416_0.5, SRT_BH416_1.5, SRT_BH416_3.0, SRT_BH417_0.5, SRT_BH417_1.5, SRT_BH417_3.0, SRT_BH421_0.5, SRT_BH421_1.0, SRT_BH421_3.0, QCA102, QCA103	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**12-Oct-2018**	20-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP071)							
SRT-BH420-1.0, SRT-BH420-2.0, SRT_BH408_0.2, SRT_BH408_2.0, SRT_BH409_1.5, SRT_BH409_3.0, SRT_BH410_0.2, SRT_BH410_1.5, SRT_BH411_1.0, SRT_BH411_2.0, SRT_BH412_0.5, SRT_BH412_2.0, SRT_BH416_0.25, SRT_BH416_1.5, SRT_BH416_3.0, SRT_BH417_3.0, SRT_BH421_0.5, SRT_BH421_1.0, SRT_BH421_3.0	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**15-Oct-2018**	20-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP080)							
SRT_BH422_0.5, SRT_BH422_1.0, SRT_BH422_1.5, SRT_BH426_0.1, SRT_BH426_1.0, SRT_BH426_2.0, SRT_BH426_4.0	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**12-Oct-2018**	21-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP071)							
SRT_BH422_1.0, SRT_BH422_1.5	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**15-Oct-2018**	20-Nov-2018	✓

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
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) Trip Spike 8, Trip Spike TS100, Trip Control Spike	**02-Oct-2018**	**11-Oct-2018**	16-Oct-2018	✓	**12-Oct-2018**	16-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080) TSC 8	**02-Oct-2018**	**15-Oct-2018**	16-Oct-2018	✓	**15-Oct-2018**	16-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080) Trip Blank, Trip Blank TB100	**05-Oct-2018**	**11-Oct-2018**	19-Oct-2018	✓	**12-Oct-2018**	19-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080) SRT-BH420-0.5, SRT-BH420-1.0, SRT-BH420-2.0, SRT_BH408_0.2, SRT_BH408_0.5, SRT_BH408_2.0, SRT_BH409_0.5, SRT_BH409_1.5, SRT_BH409_3.0, SRT_BH410_0.2, SRT_BH410_0.8, SRT_BH410_1.5, SRT_BH411_0.5, SRT_BH411_1.0, SRT_BH411_2.0, SRT_BH412_0.5, QCA101, SRT_BH412_1.0, SRT_BH412_2.0, SRT_BH416_0.25, SRT_BH416_0.5, SRT_BH416_1.5, SRT_BH416_3.0, SRT_BH417_0.5, SRT_BH417_1.5, SRT_BH417_3.0, SRT_BH421_0.5, SRT_BH421_1.0, SRT_BH421_3.0, QCA102, QCA103	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**12-Oct-2018**	20-Oct-2018	✓
Soil Glass Jar - Unpreserved (EP080) SRT_BH422_0.5, SRT_BH422_1.0, SRT_BH422_1.5, SRT_BH426_0.1, SRT_BH426_1.0, SRT_BH426_2.0, SRT_BH426_4.0	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**12-Oct-2018**	21-Oct-2018	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
Soil Glass Jar - Unpreserved (EP231X) SRT_BH421_3.0	**06-Oct-2018**	**12-Oct-2018**	04-Apr-2019	✓	**12-Oct-2018**	21-Nov-2018	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
Soil Glass Jar - Unpreserved (EP231X) SRT_BH421_3.0	**06-Oct-2018**	**12-Oct-2018**	04-Apr-2019	✓	**12-Oct-2018**	21-Nov-2018	✓
EP231C: Perfluoroalkyl Sulfonamides							
Soil Glass Jar - Unpreserved (EP231X) SRT_BH421_3.0	**06-Oct-2018**	**12-Oct-2018**	04-Apr-2019	✓	**12-Oct-2018**	21-Nov-2018	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
Soil Glass Jar - Unpreserved (EP231X) SRT_BH421_3.0	**06-Oct-2018**	**12-Oct-2018**	04-Apr-2019	✓	**12-Oct-2018**	21-Nov-2018	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
Soil Glass Jar - Unpreserved (EP231X)							
SRT_BH421_3.0	**06-Oct-2018**	**12-Oct-2018**	04-Apr-2019	✓	**12-Oct-2018**	21-Nov-2018	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
RB100	**06-Oct-2018**	**12-Oct-2018**	04-Apr-2019	✓	**12-Oct-2018**	04-Apr-2019	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
RB103	**07-Oct-2018**	**12-Oct-2018**	05-Apr-2019	✓	**12-Oct-2018**	05-Apr-2019	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
RB100	**06-Oct-2018**	**----**	----	----	**12-Oct-2018**	03-Nov-2018	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
RB103	**07-Oct-2018**	**----**	----	----	**12-Oct-2018**	04-Nov-2018	✓
EP066: Polychlorinated Biphenyls (PCB)							
Amber Glass Bottle - Unpreserved (EP066)							
RB100	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
Amber Glass Bottle - Unpreserved (EP066)							
RB103	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068)							
RB100	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
Amber Glass Bottle - Unpreserved (EP068)							
RB103	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068)							
RB100	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
Amber Glass Bottle - Unpreserved (EP068)							
RB103	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074)							
RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓
EP074B: Oxygenated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP074) RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074) RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP074) RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP074) RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP074) RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP074) RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓
EP074H: Naphthalene							
Amber VOC Vial - Sulfuric Acid (EP074) RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP074) RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) RB100	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) RB103	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) RB100	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
Amber Glass Bottle - Unpreserved (EP071) RB103	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) RB100	**06-Oct-2018**	**11-Oct-2018**	13-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
Amber Glass Bottle - Unpreserved (EP071) RB103	**07-Oct-2018**	**11-Oct-2018**	14-Oct-2018	✓	**12-Oct-2018**	20-Nov-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) RB100	**06-Oct-2018**	**11-Oct-2018**	20-Oct-2018	✓	**11-Oct-2018**	20-Oct-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080) RB103	**07-Oct-2018**	**11-Oct-2018**	21-Oct-2018	✓	**11-Oct-2018**	21-Oct-2018	✓

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	6	62	**9.68**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	6	55	**10.91**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	3	28	**10.71**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	38	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	5	38	**13.16**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	6	55	**10.91**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	8	68	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	3	55	**5.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	2	28	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	55	**5.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	68	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	3	55	**5.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	2	28	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	1	15	**6.67**	**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		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
TRH - Semivolatile Fraction	EP071	3	55	**5.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	68	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	3	55	**5.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	55	**5.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	68	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	2	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	2	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	2	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	13	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	2	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	2	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	2	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	13	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	SOIL	In house: Referenced to Ahern et al 2004 - a suspension peroxide oxidation method following the 'sulfur trail' by determining the level of 1M KCL extractable sulfur and the sulfur level after oxidation of soil sulphides. The 'acidity trail' is followed by measurement of TAA, TPA and TSA. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5.
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Asbestos Identification in Soils	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Asbestos Classification and Quantitation per NEPM 2013	* EA200N	SOIL	Asbestos Classification and Quantitation per NEPM 2013 with Confirmation of Identification by AS 4964 - 2004 Gravimetric determination of Asbestos Containing Material, Fibrous Asbestos, Asbestos Fines and sample weight and calculation of percentage concentrations per NEPM protocols. Asbestos (Fines and Fibrous FA+AF) is reported as the equivalent weight in the sample received after accounting for sub-sampling (where applicable for the <7mm and/or <2mm fractions).
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, 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 (2013) Schedule B(3)
Total Phenol By Discrete Analyser	EP035G	SOIL	In house: Referenced to APHA 5530 B&D Steam distillable Phenols are reacted with 4-aminoantipyrine. The resultant colour intensity is measured by Seal
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270D 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 (2013) Schedule B(3) (Method 504)
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270D 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 (2013) Schedule B(3) (Method 504,505)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM amended 2013.
Volatile Organic Compounds	EP074	SOIL	In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 501)

Analytical Methods	Method	Matrix	Method Descriptions
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D. 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 (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM amended 2013.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-House. A portion of soil is extracted with MTBE. The extract is taken to dryness, made up in mobile phase. Analysis is by LC/MSMS, ESI 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. This method complies with the quality control definitions as stated in QSM 5.1. Data is reviewed in line with the DQOs as stated in QSM5.1
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The 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 (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample 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 (2013) Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample 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 (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A 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 the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Drying at 85 degrees, bagging and labelling (ASS)	EN020PR	SOIL	In house
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 (2013) Schedule B(3) (Method 202)
Phenols After Microdistillation	EP035D	SOIL	In house: Referenced to APHA 5530 A, B&D. pH adjusted Steam distillable Phenolic compounds. The resultant colour intensity is measured by Discrete Analyser.
Sample Extraction for PFAS	EP231-PR	SOIL	In house
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.
Digestion for Total Recoverable Metals	EN25	WATER	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 (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

CHAIN OF CUSTODY & ANALYSIS REQUEST

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Smithfield NSW 2164 Australia
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Lab ID Number: *(please quote on correspondence)*

Site: 1791865 – SM TSE

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

Additional Report Formats
NEPM
CSV
ESDAT
DQO
GO, Guidelines --------
Others _____

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other____	NO. OF CONTAINERS	ANALYSIS REQUESTED: HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)		EA200N (asbestos NEPM)	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)	Notes/Guidelines/LOR/ Special instructions
1	SRT-BH415-0.2	20/10/18	X			2	X													
2	SRT-BH415-0.5	20/10/18	X			2			X	X	X	X	X		X					
3	SRT-BH415-1.0	20/10/18	X			3	X													
4	SRT-BH415-1.5	20/10/18	X			1 (jar)	X													
5	SRT-BH415-2.0	20/10/18	X			2	X	X												
6	SRT-BH415-3.0	20/10/18	X			2	X	X												
7	SRT-BH415-4.0	20/10/18	X			2	X										X			
8	SRT-BH415-5.0	20/10/18	X			2	X	X												
9	SRT-BH415-5.1	20/10/18	X			1 (jar)	X													
10	SRT-BH419-1.05	20/10/18	X			2			X	X	X	X	X		X					
11	SRT-BH419-1.6	20/10/18	X			2	X													
12	SRT-BH419-2.0	20/10/18	X			2	X	X												
13	SRT-BH419-3.0	20/10/18	X			2	X										X			

Subcon / Forward Lab / Split WO
Lab / Analysis: SPOCAS → Brisbane
Organised By / Date: Asbestos →
Relinquished By / Date: Newcastle
Connote / Courier:
WO No:
Attach By

Environmental Division
Sydney
Work Order Reference
ES1831696
Telephone : +61-2-8784 8555

Relinquished By:	Date/Time:	Received By: [signature] AS.	Date/Time: 24/10/18 15:20
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD

Uncontrolled template when printed

Up Date COC

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Lab ID Number:*(please quote on correspondence)*

Site: 1791865 – SM TSE

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Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

Additional Report Formats
NEPM
CSV
ESDAT
DQO
GO, Guidelines ---------
Others _____

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other____	NO. OF CONTAINERS	ANALYSIS REQUESTED: HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)		EA200N (asbestos NEPM)	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	(TRH / BTEXN / PAH / 8 Metals, OCPs/OPPs/PCBs)	Notes/Guidelines/LOR/ Special instructions
14	SRT-BH419-4.0	20/10/18	X			2	X	X												
15	SRT-BH419-4.5	20/10/18	X			2	X	X												
16	SRT-BH419-7.0 SRT-BH419-72	20/10/18	X			2	X	X												
17	SRT-QCA106	20/10/18	X			1	X													
18	SRT-RB106	20/10/18		X		4	X												X	
19	SRT-TB106	20/10/18	X			1	X											X		
20	SRT-TS106	20/10/18	X			1	X											X		
21	TSC																			

Relinquished By:	Date/Time:	Received By: [signature]	Date/Time: 24/10/18 1520 3-2 C
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: Yes / *No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD

Fadi Soro

From: Sepan Mahamad
Sent: Wednesday, 24 October 2018 2:39 PM
To: Fadi Soro; Loren Schiavon
Subject: FW: COC for samples for project 1791865
Attachments: 1791865_COC_Primary Lab_Soil_COC04 (002).docx

Hi Loren and Fadi,

Please see attached CoC for samples from Golder delivered earlier this week.

Please note that my office hours are 11am - 5.30pm Monday to Friday. For assistance outside of this time please contact **ALSEnviro.Sydney@alsglobal.com**.

Kind Regards,

Sepan Mahamad

Client Services Officer, Environmental
Sydney

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From: Doyle, Shane [mailto:SDoyle@golder.com.au]
Sent: Wednesday, 24 October 2018 13:04
To: ALSEnviro Sydney <ALSEnviro.Sydney@ALSGlobal.com>
Cc: Houston, Barry <bhouston@golder.com.au>; Bonetti, Rita <RBonetti@golder.com.au>
Subject: COC for samples for project 1791865

Attached is the COC for samples delivered earlier this week.

Please contact Barry Houston if you have any questions.

Regards

GOLDER **Shane Doyle (BSc[Chem], MSc[EnvTox], MRACI CChem)**
Principal Environmental Scientist

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Lab ID Number: *(please quote on correspondence)*

Site: 1791865 – SM TSE

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 / Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)		EA200N (asbestos NEPM)	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)	Notes/Guidelines/LOR/ Special instructions
	SRT-BH415-0.2	20/10/18	X			2	X													
	SRT-BH415-0.5	20/10/18	X			2	X													
	SRT-BH415-1.0	20/10/18	X			3	X													
	SRT-BH415-1.5	20/10/18	X			1 (jar)	X													
	SRT-BH415-2.0	20/10/18	X			2	X	X												
	SRT-BH415-3.0	20/10/18	X			2	X	X												
	SRT-BH415-4.0	20/10/18	X			2	X	X												
	SRT-BH415-5.0	20/10/18	X			2	X	X												
	SRT-BH415-5.1	20/10/18	X			1 (jar)	X													
	SRT-BH419-1.05	20/10/18	X			2	X													
	SRT-BH419-1.6	20/10/18	X			2	X													
	SRT-BH419-2.0	20/10/18	X			2	X	X												
	SRT-BH419-3.0	20/10/18	X			2	X	X												

ANALYSIS REQUESTED

Additional Report Formats

NEPM
CSV
ESDAT
DQO
GO, Guidelines --------
_____
Others _____

Relinquished By:	Date/Time: 23/10/18	Received By:	Date/Time: 23/10/18 1520 3-2
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
277-289 Woodpark Road
Smithfield NSW 2164 Australia
T +61 2 8784 8503
F +61 2 8784 8500

Lab ID Number: *(please quote on correspondence)*

Site: 1791865 – SM TSE

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:	SY/698/17 C		

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate) Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)		EA200N (asbestos NEPM)	EILs (pH / CEC \ clay content)	SPOCAS	S-18 (TRH C6-C10 / BTEXN)	(TRH / BTEXN / PAH / 8 Metals, OCPs/OPPs/PCBs)	Additional Report Formats / Notes/Guidelines/LOR/ Special instructions
	SRT-BH419-4.0	20/10/18	X			2	X	X												
	SRT-BH419-4.5	20/10/18	X			2	X	X												
	SRT-BH419-7.0	20/10/18	X			2	X	X												
	SRT-QCA106	20/10/18	X			1	X													
	SRT-RB106	20/10/18		X		4	X													
	SRT-TB106	20/10/18	X			1	X													
	SRT-TS106	20/10/18	X			1	X													

Additional Report Formats: NEPM, CSV, ESDAT, DQO, GO, Guidelines ---------, Others _____

Relinquished By:	Date/Time: 23/10/18	Received By:	Date/Time: 23/10/18 1520
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD

Loren Schiavon

From: Sepan Mahamad
Sent: Friday, 2 November 2018 2:05 PM
To: Fadi Soro; Loren Schiavon; Edwandy Fadjar; Sanjeshni Jyoti
Cc: Barbara Hanna
Subject: ES1831696 Rebatch - holding time out tomorrow

Importance: High

Hi Fadi/Loren,

Can you please process this rebatch asap?

Lab team,

Please extract the sample today for SVOC. Sample was taken on 20/10, therefore, HT will be out tomorrow.

Please note that my office hours are 11am - 5.30pm Monday to Friday. For assistance outside of this time please contact **ALSEnviro.Sydney@alsglobal.com**.

Kind Regards,

Sepan Mahamad
Client Services Officer, Environmental Sydney

T +61 2 9437 9978
M +61 438 511 003
sepan.mahamad@alsglobal.com
Shop 2, 36 Hume St
Crows Nest NSW 2065 AUSTRALIA

Subscribe

Environmental Division Sydney
Work Order Reference
ES1831696

Telephone : +61-2-8784 8555



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From: Bonetti, Rita [mailto:RBonetti@golder.com.au]
Sent: Friday, 2 November 2018 13:15
To: ALSEnviro Sydney <ALSEnviro.Sydney@ALSGlobal.com>; Sepan Mahamad <Sepan.Mahamad@alsglobal.com>
Cc: Houston, Barry <bhouston@golder.com.au>
Subject: RE: RESULTS & EDD for ALS Workorder : ES1831696 | Your Reference: Sydney Metro
Importance: High

Good afternoon Sepan,

Could I please get sample SRT-QCA106 from batch ES1831696 analysed for the following:

- S-26: TRH, BTEX, metals and PAHs
- S-12: OCPs and OPPs
- EP074: VOCs
- EP066: PCBs
- EP035G: Phenols

The sample will exceed holding time for SVOCs and VOCs tomorrow, so could you please get the sample extracted today?

Thanks in advance!

Cheers,
Rita

Rita Bonetti (BEnvSC (Adv))
Environmental Scientist

GOLDER
Golder Associates Pty Ltd
124 Pacific Highway, St. Leonards, New South Wales 2065, Australia (PO Box 1302, Crows Nest NSW 1585)
T: +61 2 9478 3900 | D: +61 (2) 9478 3906 | M: +61 437 039 929 | golder.com
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Please consider the environment before printing this email.

From: angel-no-reply@alsglobal.com <angel-no-reply@alsglobal.com>
Sent: Thursday, 1 November 2018 5:47 PM
To: Bonetti, Rita <RBonetti@golder.com.au>
Subject: RESULTS & EDD for ALS Workorder : ES1831696 | Your Reference: Sydney Metro

ALS Environmental

Deliverables for ALS Workorder ES1831696

Project: Sydney Metro

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES1831696**

Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: RBonetti@golder.com.au	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9478 3901	Facsimile	: +61-2-8784 8500
Project	: Sydney Metro	Page	: 1 of 3
Order number	:	Quote number	: ES2017GOLASS0019 (SY/698/17 C V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: 1791865-SM TSE		
Sampler	:		

Dates

Date Samples Received	: 24-Oct-2018 15:20	Issue Date	: 26-Oct-2018
Client Requested Due Date	: 01-Nov-2018	Scheduled Reporting Date	: **01-Nov-2018**

Delivery Details

Mode of Delivery	: Pickup	Security Seal	: Intact.
No. of coolers/boxes	: 2	Temperature	: 3.2 - Ice present
Receipt Detail	:	No. of samples received / analysed	: 21 / 8

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 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 absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- SPOCAS analysis to be conducted by ALS Brisbane.
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.

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	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP035G (solids) Total Phenol by Discrete Analyser	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - S-12 OC/OP Pesticides	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES1831696-001	20-Oct-2018 00:00	SRT-BH415-0.2	✓						
ES1831696-002	20-Oct-2018 00:00	SRT-BH415-0.5		✓	✓	✓	✓	✓	✓
ES1831696-003	20-Oct-2018 00:00	SRT-BH415-1.0	✓						
ES1831696-004	20-Oct-2018 00:00	SRT-BH415-1.5	✓						
ES1831696-005	20-Oct-2018 00:00	SRT-BH415-2.0	✓						
ES1831696-006	20-Oct-2018 00:00	SRT-BH4153.0	✓						
ES1831696-008	20-Oct-2018 00:00	SRT-BH415-5.0	✓						
ES1831696-009	20-Oct-2018 00:00	SRT-BH415-5.1	✓						
ES1831696-010	20-Oct-2018 00:00	SRT-BH419-1.05		✓	✓	✓	✓	✓	✓
ES1831696-011	20-Oct-2018 00:00	SRT-BH419-1.6	✓						
ES1831696-012	20-Oct-2018 00:00	SRT-BH419-2.0	✓						
ES1831696-014	20-Oct-2018 00:00	SRT-BH419-4.0	✓						
ES1831696-015	20-Oct-2018 00:00	SRT-BH419-4.5	✓						
ES1831696-016	20-Oct-2018 00:00	SRT-BH419-7.0	✓						
ES1831696-017	20-Oct-2018 00:00	SRT-QCA106	✓						

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA029 SPOCAS	SOIL - EA200N Asbestos in Soils - (<1kg samples ONLY)	SOIL - S-18 TRH(C6-C9)/BTEXN
ES1831696-002	20-Oct-2018 00:00	SRT-BH415-0.5		✓	
ES1831696-007	20-Oct-2018 00:00	SRT-BH415-4.0	✓		
ES1831696-010	20-Oct-2018 00:00	SRT-BH419-1.05		✓	
ES1831696-013	20-Oct-2018 00:00	SRT-BH419-3.0	✓		
ES1831696-019	15-Oct-2018 00:00	SRT-TB106			✓
ES1831696-020	15-Oct-2018 00:00	SRT-TS106			✓
ES1831696-021	15-Oct-2018 00:00	Trip Spike Control			✓

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - W-16T TRH/BTEXN/PAH/OC/OP/PCB/8 Total metals
ES1831696-018	20-Oct-2018 00:00	SRT-RB106	✓

Proactive Holding Time Report

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

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	au_accountspayable@golder.com.au

BARRY HOUSTON

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

RITA BONETTI

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

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1831696**	Page	: 1 of 18
Amendment	: **1**		
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 24-Oct-2018 15:20
Order number	: .	Date Analysis Commenced	: 26-Oct-2018
C-O-C number	: ----	Issue Date	: 07-Nov-2018 16:01
Sampler	: ----		
Site	: 1791865-SM TSE		
Quote number	: SY/698/17 C V4		
No. of samples received	: 21		
No. of samples analysed	: 9		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive 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*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Emily Daos	Team Leader - Asbestos	Melbourne Asbestos, Springvale, VIC
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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.

- ASS: EA029 (SPOCAS): Retained Acidity not required because pH KCl greater than or equal to 4.5
- Amendment (02/11/2018): This report has been amended and re-released to allow the reporting of additional analytical data.
- ASS: EA029 (SPOCAS): Excess ANC not required because pH OX less than 6.5.
- EP080: The trip spike and its control have been analysed for volatile TPH and BTEX only. The trip spike and control were prepared in the lab using reagent grade sand spiked with petrol. The spike was dispatched from the lab and the control retained.
- EA200N: Asbestos weights and percentages are not covered under the Scope of NATA Accreditation.
  Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present)
  The Asbestos (Fines and Fibrous) weight is calculated from the extracted Fibrous Asbestos and Asbestos Fines as an equivalent weight of 100% Asbestos
  Percentages for Asbestos content in ACM are based on the 2013 NEPM default values.
  All calculations of percentage Asbestos under this method are approximate and should be used as a guide only.
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime ($CaCO_3$) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m3 in-situ soil, multiply reported results x wet bulk density of soil in t/m3.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.
- EA200N: ALS laboratory procedures and methods used for the identification and quantitation of asbestos are consistent with AS4964-2004 and the requirements of the 2013 NEPM for Assessment of Site Contamination
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
  Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH415-0.5	SRT-BH415-4.0	SRT-BH419-1.05	SRT-BH419-3.0	SRT-QCA106
			Client sampling date / time	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1831696-002	ES1831696-007	ES1831696-010	ES1831696-013	ES1831696-017
				Result	Result	Result	Result	Result
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	----	6.0	----	5.7	----
pH OX (23B)	----	0.1	pH Unit	----	5.0	----	4.1	----
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	<2	----	<2	----
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	----	8	----	7	----
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	----	8	----	7	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.020	% pyrite S	----	<0.020	----	<0.020	----
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.020	% pyrite S	----	<0.020	----	<0.020	----
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.020	% pyrite S	----	<0.020	----	<0.020	----
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.020	% S	----	<0.020	----	<0.020	----
Peroxide Sulfur (23De)	----	0.020	% S	----	<0.020	----	<0.020	----
Peroxide Oxidisable Sulfur (23E)	----	0.020	% S	----	<0.020	----	<0.020	----
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	----	<10	----	<10	----
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.020	% Ca	----	<0.020	----	<0.020	----
Peroxide Calcium (23Wh)	----	0.020	% Ca	----	<0.020	----	<0.020	----
Acid Reacted Calcium (23X)	----	0.020	% Ca	----	<0.020	----	<0.020	----
acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	----	<10	----	<10	----
sulfidic - Acid Reacted Calcium (s-23X)	----	0.020	% S	----	<0.020	----	<0.020	----
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.020	% Mg	----	<0.020	----	<0.020	----
Peroxide Magnesium (23Tm)	----	0.020	% Mg	----	<0.020	----	<0.020	----
Acid Reacted Magnesium (23U)	----	0.020	% Mg	----	<0.020	----	<0.020	----
Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	----	<10	----	<10	----
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.020	% S	----	<0.020	----	<0.020	----
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	1.5	----	1.5	----
Net Acidity (sulfur units)	----	0.02	% S	----	<0.02	----	<0.02	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	<10	----	<10	----
Liming Rate	----	1	kg CaCO3/t	----	<1	----	<1	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH415-0.5	SRT-BH415-4.0	SRT-BH419-1.05	SRT-BH419-3.0	SRT-QCA106
				Client sampling date / time	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1831696-002	ES1831696-007	ES1831696-010	ES1831696-013	ES1831696-017
					Result	Result	Result	Result	Result
EA029-H: Acid Base Accounting - Continued									
Net Acidity excluding ANC (sulfur units)	----	0.02	% S		----	<0.02	----	<0.02	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t		----	<10	----	<10	----
Liming Rate excluding ANC	----	1	kg CaCO3/t		----	<1	----	<1	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		8.8	----	17.6	----	8.9
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		No	----	No	----	----
Asbestos (Trace)	1332-21-4	5	Fibres		No	----	No	----	----
Asbestos Type	1332-21-4	-	--		-	----	-	----	----
Sample weight (dry)	----	0.01	g		520	----	557	----	----
APPROVED IDENTIFIER:	----	-	--		E.DAOS	----	E.DAOS	----	----
EA200N: Asbestos Quantification (non-NATA)									
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g		<0.0004	----	<0.0004	----	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)		<0.001	----	<0.001	----	----
ø Asbestos Containing Material	1332-21-4	0.1	g		<0.1	----	<0.1	----	----
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	% (w/w)		<0.01	----	<0.01	----	----
ø Weight Used for % Calculation	----	0.0001	kg		0.520	----	0.557	----	----
ø Fibrous Asbestos >7mm	----	0.0004	g		<0.0004	----	<0.0004	----	----
EG005T: Total Metals by ICP-AES									
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		7	----	7	----	7
Copper	7440-50-8	5	mg/kg		<5	----	27	----	<5
Lead	7439-92-1	5	mg/kg		16	----	64	----	14
Nickel	7440-02-0	2	mg/kg		3	----	3	----	3
Zinc	7440-66-6	5	mg/kg		20	----	91	----	21
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	<0.1	----	<0.1
EP035G: Total Phenol by Discrete Analyser									
Phenols (Total)	----	1	mg/kg		<1	----	<1	----	<1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	----	<0.1	----	<0.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH415-0.5	SRT-BH415-4.0	SRT-BH419-1.05	SRT-BH419-3.0	SRT-QCA106
			Client sampling date / time	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1831696-002	ES1831696-007	ES1831696-010	ES1831696-013	ES1831696-017
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	----	<0.2	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	<0.2	----	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	<0.2	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	<0.2	----	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	----	<0.05	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH415-0.5	SRT-BH415-4.0	SRT-BH419-1.05	SRT-BH419-3.0	SRT-QCA106
				Client sampling date / time	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1831696-002	ES1831696-007	ES1831696-010	ES1831696-013	ES1831696-017
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Styrene	100-42-5	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		<5	----	<5	----	<5
2-Butanone (MEK)	78-93-3	5	mg/kg		<5	----	<5	----	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		<5	----	<5	----	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg		<5	----	<5	----	<5
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
EP074D: Fumigants									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH415-0.5	SRT-BH415-4.0	SRT-BH419-1.05	SRT-BH419-3.0	SRT-QCA106
			Client sampling date / time	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1831696-002	ES1831696-007	ES1831696-010	ES1831696-013	ES1831696-017
				Result	Result	Result	Result	Result
EP074D: Fumigants - Continued								
2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	----	<5	----	<5
Chloromethane	74-87-3	5	mg/kg	<5	----	<5	----	<5
Vinyl chloride	75-01-4	5	mg/kg	<5	----	<5	----	<5
Bromomethane	74-83-9	5	mg/kg	<5	----	<5	----	<5
Chloroethane	75-00-3	5	mg/kg	<5	----	<5	----	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	----	<5	----	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Iodomethane	74-88-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-BH415-0.5	SRT-BH415-4.0	SRT-BH419-1.05	SRT-BH419-3.0	SRT-QCA106
			Client sampling date / time	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1831696-002	ES1831696-007	ES1831696-010	ES1831696-013	ES1831696-017
				Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
EP074G: Trihalomethanes								
Chloroform	67-66-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Bromoform	75-25-2	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	<1	----	<1	----	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	**0.6**	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	**8.5**	----	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	**1.9**	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	**8.7**	----	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	**7.4**	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	**3.0**	----	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	**2.6**	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	**2.8**	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	**1.2**	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	**2.5**	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	**1.0**	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	**1.2**	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	**41.4**	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH415-0.5	SRT-BH415-4.0	SRT-BH419-1.05	SRT-BH419-3.0	SRT-QCA106
				Client sampling date / time	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1831696-002	ES1831696-007	ES1831696-010	ES1831696-013	ES1831696-017
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	**3.3**	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	**3.6**	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	**3.8**	----	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg		<50	----	<50	----	<50
C15 - C28 Fraction	----	100	mg/kg		<100	----	<100	----	<100
C29 - C36 Fraction	----	100	mg/kg		<100	----	<100	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	<50	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	<10	----	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	----	<50	----	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	----	<100	----	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	----	<100	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	<50	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	<50	----	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	<0.5	----	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	----	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**115**	----	**98.7**	----	**76.3**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**116**	----	**102**	----	**93.0**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**98.7**	----	**115**	----	**71.4**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SRT-BH415-0.5	SRT-BH415-4.0	SRT-BH419-1.05	SRT-BH419-3.0	SRT-QCA106
				Client sampling date / time	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00	20-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1831696-002	ES1831696-007	ES1831696-010	ES1831696-013	ES1831696-017
					Result	Result	Result	Result	Result
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		86.5	----	80.3	----	87.6
Toluene-D8	2037-26-5	0.5	%		99.9	----	85.4	----	86.9
4-Bromofluorobenzene	460-00-4	0.5	%		96.6	----	85.9	----	83.9
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		76.4	----	69.6	----	67.2
2-Chlorophenol-D4	93951-73-6	0.5	%		82.6	----	75.5	----	71.6
2.4.6-Tribromophenol	118-79-6	0.5	%		60.0	----	61.0	----	51.8
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		92.3	----	83.1	----	79.8
Anthracene-d10	1719-06-8	0.5	%		95.2	----	83.5	----	81.3
4-Terphenyl-d14	1718-51-0	0.5	%		85.0	----	75.0	----	72.2
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		89.9	----	80.9	----	89.6
Toluene-D8	2037-26-5	0.2	%		98.3	----	83.8	----	89.6
4-Bromofluorobenzene	460-00-4	0.2	%		96.2	----	86.8	----	87.4

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SRT-TB106	SRT-TS106	Trip Spike Control	----	----
			Client sampling date / time	15-Oct-2018 00:00	15-Oct-2018 00:00	15-Oct-2018 00:00	----	----
Compound	CAS Number	LOR	Unit	ES1831696-019	ES1831696-020	ES1831696-021	--------	--------
				Result	Result	Result	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	**17**	**31**	**----**	**----**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	**23**	**40**	**----**	**----**
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg	<10	**11**	**18**	**----**	**----**
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	**----**	**----**
Toluene	108-88-3	0.5	mg/kg	<0.5	**4.2**	**8.9**	**----**	**----**
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	**0.8**	**1.5**	**----**	**----**
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	**4.6**	**7.7**	**----**	**----**
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	**2.4**	**3.5**	**----**	**----**
^ **Sum of BTEX**	----	0.2	mg/kg	<0.2	**12.0**	**21.6**	**----**	**----**
^ **Total Xylenes**	----	0.5	mg/kg	<0.5	**7.0**	**11.2**	**----**	**----**
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	**----**	**----**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**91.3**	**84.4**	**94.7**	**----**	**----**
Toluene-D8	2037-26-5	0.2	%	**85.8**	**82.8**	**91.0**	**----**	**----**
4-Bromofluorobenzene	460-00-4	0.2	%	**90.7**	**85.8**	**90.0**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	SRT-RB106	----	----	----	----
			Client sampling date / time	20-Oct-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1831696-018	--------	--------	--------	--------
				Result	----	----	----	----
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
^ **Total Polychlorinated biphenyls**	----	1	µg/L	<1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	----	----	----	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	----	----	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	----	----	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	----	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	----	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L	<0.5	----	----	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	----	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L	<0.5	----	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	----	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	----	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L	<2.0	----	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	----	----	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	----	----	----	----
^ **Total Chlordane (sum)**	----	0.5	µg/L	<0.5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-RB106	----	----	----	----
				Client sampling date / time	20-Oct-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1831696-018	--------	--------	--------	--------
					Result	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L		<0.5	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L		<0.5	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L		<0.5	----	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L		<0.5	----	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L		<2.0	----	----	----	----
Dimethoate	60-51-5	0.5	µg/L		<0.5	----	----	----	----
Diazinon	333-41-5	0.5	µg/L		<0.5	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L		<0.5	----	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L		<2.0	----	----	----	----
Malathion	121-75-5	0.5	µg/L		<0.5	----	----	----	----
Fenthion	55-38-9	0.5	µg/L		<0.5	----	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L		<0.5	----	----	----	----
Parathion	56-38-2	2.0	µg/L		<2.0	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L		<0.5	----	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L		<0.5	----	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L		<0.5	----	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L		<0.5	----	----	----	----
Prothiofos	34643-46-4	0.5	µg/L		<0.5	----	----	----	----
Ethion	563-12-2	0.5	µg/L		<0.5	----	----	----	----
Carbophenothion	786-19-6	0.5	µg/L		<0.5	----	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L		<0.5	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-RB106	----	----	----	----
				Client sampling date / time	20-Oct-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1831696-018	--------	--------	--------	--------
					Result	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
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	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>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	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ Total Xylenes	----	2	µg/L		<2	----	----	----	----
^ Sum of BTEX	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		73.1	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	SRT-RB106	----	----	----	----
				Client sampling date / time	20-Oct-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1831696-018	--------	--------	--------	--------
					Result	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		**72.9**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		**64.0**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**25.2**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		**56.2**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		**50.3**	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**85.7**	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		**82.1**	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		**92.0**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**108**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**102**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**96.5**	----	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	SRT-BH415-0.5 - 20-Oct-2018 00:00	Grey rocky soil with organic matter.
EA200: Description	SRT-BH419-1.05 - 20-Oct-2018 00:00	Brown sandy soil.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	29	129
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP075(SIM)T: PAH Surrogates - Continued			
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES1831696**	Page	: 1 of 33
Amendment	: **1**		
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 24-Oct-2018
Order number	: .	Date Analysis Commenced	: 26-Oct-2018
C-O-C number	: ----	Issue Date	: 07-Nov-2018
Sampler	: ----		
Site	: 1791865-SM TSE		
Quote number	: SY/698/17 C V4		
No. of samples received	: 21		
No. of samples analysed	: 9		

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

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

This Quality Control Report contains the following information:

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

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*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Emily Daos	Team Leader - Asbestos	Melbourne Asbestos, Springvale, VIC
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA029-A: pH Measurements (QC Lot: 2012278)									
EB1824886-001	Anonymous	EA029: pH KCl (23A)	----	0.1	pH Unit	5.7	5.8	1.74	0% - 20%
		EA029: pH OX (23B)	----	0.1	pH Unit	4.2	4.1	2.41	0% - 20%
EA029-B: Acidity Trail (QC Lot: 2012278)									
EB1824886-001	Anonymous	EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	0.021	0.00	No Limit
		EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	0.021	0.00	No Limit
		EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	<2	0.00	No Limit
		EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	12	13	0.00	No Limit
		EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	12	13	0.00	No Limit
EA029-C: Sulfur Trail (QC Lot: 2012278)									
EB1824886-001	Anonymous	EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-D: Calcium Values (QC Lot: 2012278)									
EB1824886-001	Anonymous	EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	<0.020	<0.020	0.00	No Limit
		EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-E: Magnesium Values (QC Lot: 2012278)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA029-E: Magnesium Values (QC Lot: 2012278) - continued									
EB1824886-001	Anonymous	EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	<0.020	0.00	No Limit
		EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	<0.020	0.00	No Limit
		EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA029-H: Acid Base Accounting (QC Lot: 2012278)									
EB1824886-001	Anonymous	EA029: ANC Fineness Factor	----	0.5	-	1.5	1.5	0.00	No Limit
		EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	<0.02	0.00	No Limit
		EA029: Liming Rate	----	1	kg CaCO3/t	<1	<1	0.00	No Limit
		EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	<1	0.00	No Limit
		EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	<10	0.00	No Limit
		EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	<10	0.00	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2002808)									
ES1831696-010	SRT-BH419-1.05	EA055: Moisture Content	----	0.1	%	17.6	17.6	0.00	0% - 50%
ES1831722-002	Anonymous	EA055: Moisture Content	----	0.1	%	13.9	14.5	4.37	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 2011133)									
ES1831696-002	SRT-BH415-0.5	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	7	7	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	4	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	16	17	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	20	24	17.0	No Limit
ES1831865-002	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	13	13	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	6	6	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	10	9	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	16	16	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	18	18	0.00	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 2016964)									
ES1831696-017	SRT-QCA106	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	7	8	18.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	3	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	14	12	19.4	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005T: Total Metals by ICP-AES (QC Lot: 2016964) - continued									
ES1831696-017	SRT-QCA106	EG005T: Zinc	7440-66-6	5	mg/kg	21	20	6.89	No Limit
ES1832139-003	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	5	6	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	6	6	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	14	15	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2011132)									
ES1831696-002	SRT-BH415-0.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1831865-002	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2016963)									
ES1831696-017	SRT-QCA106	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1832139-003	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP035G: Total Phenol by Discrete Analyser (QC Lot: 2002856)									
ES1831511-001	Anonymous	EP035G: Phenols (Total)	----	1	mg/kg	<1	<1	0.00	No Limit
EP035G: Total Phenol by Discrete Analyser (QC Lot: 2019150)									
ES1831696-017	SRT-QCA106	EP035G: Phenols (Total)	----	1	mg/kg	<1	<1	0.00	No Limit
ES1832758-004	Anonymous	EP035G: Phenols (Total)	----	1	mg/kg	<1	<1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2003254)									
ES1831676-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1831795-009	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2016900)									
ES1831696-017	SRT-QCA106	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2003253)									
ES1831676-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2003253) - continued									
ES1831676-001	Anonymous	EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
ES1831795-009	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2016899)									
ES1831696-017	SRT-QCA106	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2016899) - continued									
ES1831696-017	SRT-QCA106	EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2003253)									
ES1831676-001	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
ES1831795-009	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2003253) - continued									
ES1831795-009	Anonymous	EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2016899)									
ES1831696-017	SRT-QCA106	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2004750)									
ES1831722-002	Anonymous	EP074: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP074: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2004750) - continued									
ES1831722-002	Anonymous	EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2016917)									
ES1831696-017	SRT-QCA106	EP074: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP074: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074B: Oxygenated Compounds (QC Lot: 2004750)									
ES1831722-002	Anonymous	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.00	No Limit
EP074B: Oxygenated Compounds (QC Lot: 2016917)									
ES1831696-017	SRT-QCA106	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.00	No Limit
EP074C: Sulfonated Compounds (QC Lot: 2004750)									
ES1831722-002	Anonymous	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074C: Sulfonated Compounds (QC Lot: 2016917)									
ES1831696-017	SRT-QCA106	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074D: Fumigants (QC Lot: 2004750)									
ES1831722-002	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074D: Fumigants (QC Lot: 2004750) - continued									
ES1831722-002	Anonymous	EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074D: Fumigants (QC Lot: 2016917)									
ES1831696-017	SRT-QCA106	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2004750)									
ES1831722-002	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2016917)									
ES1831696-017	SRT-QCA106	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2016917) - continued									
ES1831696-017	SRT-QCA106	EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 2004750)									
ES1831722-002	Anonymous	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 2016917)									
ES1831696-017	SRT-QCA106	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074F: Halogenated Aromatic Compounds (QC Lot: 2016917) - continued									
ES1831696-017	SRT-QCA106	EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 2004750)									
ES1831722-002	Anonymous	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 2016917)									
ES1831696-017	SRT-QCA106	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074H: Naphthalene (QC Lot: 2004750)									
ES1831722-002	Anonymous	EP074: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP074H: Naphthalene (QC Lot: 2016917)									
ES1831696-017	SRT-QCA106	EP074: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2003252)									
ES1831676-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2003252) - continued									
ES1831676-001	Anonymous	EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1831795-009	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2016898)									
ES1831696-017	SRT-QCA106	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2016898) - continued									
ES1831696-017	SRT-QCA106	EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2003251)									
ES1831676-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1831795-009	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2003344)									
ES1831662-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1831662-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2004751)									
ES1831722-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2016897)									
ES1831696-017	SRT-QCA106	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2016916)									
ES1831696-017	SRT-QCA106	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2003251)									
ES1831676-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1831795-009	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2003344)									
ES1831662-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	12	<10	17.3	No Limit
ES1831662-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	14	15	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2004751)									
ES1831722-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2016897)									
ES1831696-017	SRT-QCA106	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2016916)									
ES1831696-017	SRT-QCA106	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080: BTEXN (QC Lot: 2003344)									
ES1831662-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES1831662-002	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP080: BTEXN (QC Lot: 2004751)									
ES1831722-002	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP080: BTEXN (QC Lot: 2016916)									
ES1831696-017	SRT-QCA106	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 2008263)									
ES1831778-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 2008263) - continued									
ES1831778-001	Anonymous	EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
ES1831667-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.042	0.042	0.00	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.009	0.010	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.001	0.002	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.007	0.007	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2004297)									
ES1831585-011	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
ES1831688-004	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2002627)									
ES1831437-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	50	50	0.00	No Limit
ES1831652-008	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2002627)									
ES1831437-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	60	60	0.00	No Limit
ES1831652-008	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 2002627)									
ES1831437-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	22	21	0.00	0% - 50%
		EP080: ortho-Xylene	95-47-6	2	µg/L	13	13	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
ES1831652-008	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit

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

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA029-A: pH Measurements (QCLot: 2012278)								
EA029: pH KCl (23A)	----	0.1	pH Unit	<0.1	4.6 pH Unit	97.8	70	130
EA029: pH OX (23B)	----	0.1	pH Unit	<0.1	4.3 pH Unit	102	70	130
EA029-B: Acidity Trail (QCLot: 2012278)								
EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	17.7 mole H+ / t	112	70	130
EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	35.2 mole H+ / t	95.4	70	130
EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	----	----	----	----
EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029-C: Sulfur Trail (QCLot: 2012278)								
EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	0.052 % S	108	70	130
EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	0.158 % S	85.7	70	130
EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	----	----	----	----
EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	----	----	----	----
EA029-D: Calcium Values (QCLot: 2012278)								
EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	<0.020	0.097 % Ca	116	70	130
EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	<0.020	0.22 % Ca	97.9	70	130
EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	----	----	----	----
EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	----	----	----	----
EA029-E: Magnesium Values (QCLot: 2012278)								
EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	0.25 % Mg	79.9	70	130
EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	0.234 % Mg	83.9	70	130
EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	----	----	----	----
EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	----	----	----	----
EA029-H: Acid Base Accounting (QCLot: 2012278)								
EA029: ANC Fineness Factor	----	0.5	-	<0.5	----	----	----	----
EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate	----	1	kg CaCO3/t	<1	----	----	----	----
EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	----	----	----	----
EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	----	----	----	----
EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	----	----	----	----

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 2011133)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	97.8	86	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	100	83	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	96.9	76	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	101	86	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	101	80	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	105	87	123
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	106	80	122
EG005T: Total Metals by ICP-AES (QCLot: 2016964)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	112	86	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	98.5	83	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	87.6	76	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	100	86	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	97.1	80	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	98.4	87	123
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	106	80	122
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2011132)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	73.7	70	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2016963)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	88.2	70	105
EP035G: Total Phenol by Discrete Analyser (QCLot: 2002856)								
EP035G: Phenols (Total)	----	1	mg/kg	<1	5 mg/kg	71.1	60	102
EP035G: Total Phenol by Discrete Analyser (QCLot: 2019150)								
EP035G: Phenols (Total)	----	1	mg/kg	<1	5 mg/kg	80.0	60	102
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2003254)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	116	62	126
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2016900)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	114	62	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 2003253)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	95.5	69	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	93.7	65	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	90.0	67	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	91.4	68	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.5	65	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.7	67	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	88.2	69	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	90.1	62	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	89.7	63	117

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 2003253) - continued								
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	93.5	66	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	91.4	64	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	90.6	66	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.2	67	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	87.2	67	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	93.9	69	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	93.7	69	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	99.4	56	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	103	62	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	74.3	66	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	103	64	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	79.0	54	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2016899)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	87.2	69	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	88.7	65	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	87.0	67	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	91.8	68	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	82.9	65	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	87.0	67	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	92.7	69	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	88.6	62	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	88.0	63	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.7	66	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	88.7	64	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	92.7	66	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	93.3	67	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	91.1	67	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	92.1	69	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	89.4	69	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	87.1	56	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	90.2	62	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	89.8	66	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	87.7	64	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	79.4	54	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2003253)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	86.7	59	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.6	62	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	92.0	54	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	85.0	67	119

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2003253) - continued								
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	82.0	70	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	85.2	72	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	80.7	68	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	76.1	68	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	86.1	69	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	86.3	76	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	80.4	64	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	84.0	70	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	84.0	69	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	87.4	66	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	83.0	68	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	93.1	62	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	90.6	68	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	97.6	65	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	82.6	41	123
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2016899)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	77.0	59	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	77.5	62	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	75.0	54	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	89.8	67	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	89.1	70	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	89.8	72	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	79.1	68	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	78.9	68	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	87.8	69	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	91.7	76	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	77.7	64	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	89.2	70	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	83.3	69	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	87.9	66	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	82.0	68	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	94.8	62	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	84.6	68	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	90.8	65	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	64.6	41	123
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2004750)								
EP074: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	94.5	71	121
EP074: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	93.0	65	131
EP074: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	95.4	72	114

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2004750) - continued								
EP074: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	94.7	70	116
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	92.0	67	113
EP074: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	95.8	75	115
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	94.0	65	117
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	93.7	66	122
EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	92.7	68	118
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	92.1	69	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	92.4	69	117
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	93.7	69	115
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	91.1	66	118
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	89.1	59	125
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2016917)								
EP074: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	104	71	121
EP074: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	105	65	131
EP074: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	104	72	114
EP074: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	102	70	116
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	101	67	113
EP074: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	103	75	115
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	105	65	117
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	104	66	122
EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	106	68	118
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	104	69	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	108	69	117
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	103	69	115
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	104	66	118
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	104	59	125
EP074B: Oxygenated Compounds (QCLot: 2004750)								
EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	10 mg/kg	76.8	30	156
EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	10 mg/kg	86.3	58	136
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	10 mg/kg	94.7	62	132
EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	10 mg/kg	84.4	54	136
EP074B: Oxygenated Compounds (QCLot: 2016917)								
EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	10 mg/kg	101	30	156
EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	10 mg/kg	84.0	58	136
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	10 mg/kg	95.6	62	132
EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	10 mg/kg	90.6	54	136

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074C: Sulfonated Compounds (QCLot: 2004750)								
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	80.6	54	126
EP074C: Sulfonated Compounds (QCLot: 2016917)								
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	94.5	54	126
EP074D: Fumigants (QCLot: 2004750)								
EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	87.5	60	126
EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	96.2	68	124
EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	88.8	51	119
EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	85.6	52	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	95.8	63	115
EP074D: Fumigants (QCLot: 2016917)								
EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	106	60	126
EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	108	68	124
EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	100	51	119
EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	98.6	52	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	97.8	63	115
EP074E: Halogenated Aliphatic Compounds (QCLot: 2004750)								
EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	10 mg/kg	76.6	30	148
EP074: Chloromethane	74-87-3	5	mg/kg	<5	10 mg/kg	78.4	41	141
EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	10 mg/kg	88.0	43	147
EP074: Bromomethane	74-83-9	5	mg/kg	<5	10 mg/kg	81.8	47	141
EP074: Chloroethane	75-00-3	5	mg/kg	<5	10 mg/kg	88.6	49	143
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	10 mg/kg	92.5	49	135
EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	93.2	54	126
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	75.4	43	129
EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	93.1	64	120
EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	93.8	67	125
EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	90.0	69	121
EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	93.4	65	117
EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	95.3	65	123
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	92.1	59	125
EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	92.1	65	125
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	93.0	70	118
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	90.5	68	118
EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	98.1	64	126
EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	96.0	68	122
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	97.8	67	143
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	94.1	62	122
EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	86.6	54	128

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 2004750) - continued								
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	90.5	55	129
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	94.0	65	121
EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	96.4	61	125
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	88.1	20	134
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	94.1	53	129
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	89.7	50	128
EP074E: Halogenated Aliphatic Compounds (QCLot: 2016917)								
EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	10 mg/kg	97.7	30	148
EP074: Chloromethane	74-87-3	5	mg/kg	<5	10 mg/kg	101	41	141
EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	10 mg/kg	104	43	147
EP074: Bromomethane	74-83-9	5	mg/kg	<5	10 mg/kg	98.7	47	141
EP074: Chloroethane	75-00-3	5	mg/kg	<5	10 mg/kg	100	49	143
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	10 mg/kg	103	49	135
EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	104	54	126
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	81.4	43	129
EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	104	64	120
EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	102	67	125
EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	107	69	121
EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	102	65	117
EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	100	65	123
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	99.4	59	125
EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	102	65	125
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	102	70	118
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	106	68	118
EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	110	64	126
EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	102	68	122
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	102	67	143
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	104	62	122
EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	94.8	54	128
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	94.8	55	129
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	104	65	121
EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	97.6	61	125
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	96.9	20	134
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	89.1	53	129
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	110	50	128
EP074F: Halogenated Aromatic Compounds (QCLot: 2004750)								
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	93.6	68	116
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	92.4	70	114
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	92.7	68	122

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074F: Halogenated Aromatic Compounds (QCLot: 2004750) - continued								
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	90.5	67	123
EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	91.8	70	116
EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	90.3	67	117
EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	89.7	70	114
EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	85.5	48	122
EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	85.6	52	122
EP074F: Halogenated Aromatic Compounds (QCLot: 2016917)								
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	103	68	116
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	106	70	114
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	105	68	122
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	100	67	123
EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	104	70	116
EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	102	67	117
EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	102	70	114
EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	105	48	122
EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	107	52	122
EP074G: Trihalomethanes (QCLot: 2004750)								
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	91.5	66	124
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	88.3	61	121
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	90.4	63	121
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	83.1	60	126
EP074G: Trihalomethanes (QCLot: 2016917)								
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	107	66	124
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	106	61	121
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	98.7	63	121
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	93.5	60	126
EP074H: Naphthalene (QCLot: 2004750)								
EP074: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	87.6	67	129
EP074H: Naphthalene (QCLot: 2016917)								
EP074: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	105	67	129
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2003252)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	105	77	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	106	72	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	99.0	73	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	104	72	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	108	75	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	97.6	77	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	110	73	127

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2003252) - continued								
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	112	74	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	95.3	69	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	102	75	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	95.5	68	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	103	74	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	97.9	70	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	96.1	61	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	102	62	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	94.2	63	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2016898)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	97.1	77	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	96.9	72	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	92.8	73	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	94.4	72	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	99.8	75	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	89.8	77	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	102	73	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	104	74	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	87.4	69	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	94.0	75	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	91.0	68	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	98.2	74	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	89.3	70	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	83.3	61	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	85.8	62	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	79.5	63	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2003251)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	109	75	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	101	77	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	91.9	71	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2003344)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	81.2	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2004751)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	80.9	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2016897)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	90.5	75	129

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2016897) - continued								
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	95.2	77	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	99.9	71	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2016916)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	79.6	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2003251)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	104	77	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	95.4	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	93.3	63	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2003344)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	85.6	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2004751)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	85.9	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2016897)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	89.6	77	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	98.3	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	105	63	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2016916)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	81.2	68	128
EP080: BTEXN (QCLot: 2003344)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	84.9	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	86.4	67	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	84.8	65	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	85.0	66	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	90.9	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	96.7	63	119
EP080: BTEXN (QCLot: 2004751)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	86.1	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	84.6	67	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	83.4	65	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	83.2	66	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	86.1	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	88.3	63	119
EP080: BTEXN (QCLot: 2016916)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	80.3	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	79.5	67	121

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080: BTEXN (QCLot: 2016916) - continued								
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	76.4	65	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	77.1	66	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	82.7	68	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	85.2	63	119

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 2008263)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	100	82	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	97.0	84	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.4	86	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.7	83	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	96.3	85	115
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.8	84	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	100	79	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2004297)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	97.9	77	111
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2003321)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	86.0	62	107
EP068A: Organochlorine Pesticides (OC) (QCLot: 2003319)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	94.9	65	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	98.7	58	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	94.1	69	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	101	70	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	104	69	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	93.9	65	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	96.2	66	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	104	67	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	102	64	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	104	67	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	105	63	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	103	65	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	94.4	66	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	92.1	65	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	101	67	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	105	72	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	93.0	67	109

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 2003319) - continued								
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	106	65	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	95.0	65	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	99.2	64	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	93.4	61	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2003319)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	76.6	66	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	78.8	64	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	23.7	20	48
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	87.5	70	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	99.4	71	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	98.4	77	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	80.2	70	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	96.3	68	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	98.0	69	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	98.7	75	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	78.8	67	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	93.7	69	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	98.2	72	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	93.6	68	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	92.3	64	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	99.4	68	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	98.4	74	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	100	66	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	76.7	52	128
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2003320)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	72.0	50	94
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	94.7	64	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	95.8	62	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	88.1	64	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	99.7	63	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	97.9	64	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	99.8	64	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	97.0	63	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	84.4	64	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	87.1	63	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	81.1	62	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	80.9	63	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	85.9	63	117

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2003320) - continued								
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	68.6	60	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	74.0	61	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	83.1	59	118
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2002627)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	89.6	75	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2003318)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	81.5	76	116
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	100	83	109
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	87.1	75	113
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2002627)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	88.9	75	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2003318)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	2500 µg/L	83.4	76	114
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	3500 µg/L	88.9	81	111
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1500 µg/L	86.0	77	119
EP080: BTEXN (QCLot: 2002627)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	93.7	70	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	90.8	69	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	92.9	70	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	89.8	69	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	91.9	72	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	95.6	70	120

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
				Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 2011133)							
ES1831696-002	SRT-BH415-0.5	EG005T: Arsenic	7440-38-2	50 mg/kg	98.4	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	99.6	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	102	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	101	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	99.0	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	100.0	70	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 2011133) - continued							
ES1831696-002	SRT-BH415-0.5	EG005T: Zinc	7440-66-6	250 mg/kg	102	70	130
EG005T: Total Metals by ICP-AES (QCLot: 2016964)							
ES1831696-017	SRT-QCA106	EG005T: Arsenic	7440-38-2	50 mg/kg	114	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.6	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	102	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	100	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	97.8	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	100	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	104	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2011132)							
ES1831696-002	SRT-BH415-0.5	EG035T: Mercury	7439-97-6	5 mg/kg	82.2	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2016963)							
ES1831696-017	SRT-QCA106	EG035T: Mercury	7439-97-6	5 mg/kg	103	70	130
EP035G: Total Phenol by Discrete Analyser (QCLot: 2002856)							
ES1831511-001	Anonymous	EP035G: Phenols (Total)	----	4.2 mg/kg	87.0	70	130
EP035G: Total Phenol by Discrete Analyser (QCLot: 2019150)							
ES1831696-017	SRT-QCA106	EP035G: Phenols (Total)	----	4.2 mg/kg	70.2	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2003254)							
ES1831676-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	99.0	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2016900)							
ES1831696-017	SRT-QCA106	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	115	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2003253)							
ES1831676-001	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	116	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	108	70	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	80.2	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	110	70	130
		EP068: Endrin	72-20-8	2 mg/kg	118	70	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	97.0	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2016899)							
ES1831696-017	SRT-QCA106	EP068: gamma-BHC	58-89-9	0.5 mg/kg	101	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	94.2	70	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	99.4	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	84.4	70	130
		EP068: Endrin	72-20-8	2 mg/kg	86.1	70	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	85.3	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2003253)							

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2003253) - continued							
ES1831676-001	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	86.8	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	99.7	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	115	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	110	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	104	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2016899)							
ES1831696-017	SRT-QCA106	EP068: Diazinon	333-41-5	0.5 mg/kg	97.4	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	90.1	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	82.6	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	81.6	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	71.0	70	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2004750)							
ES1831722-002	Anonymous	EP074: Benzene	71-43-2	2.5 mg/kg	82.9	70	130
		EP074: Toluene	108-88-3	2.5 mg/kg	83.6	70	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2016917)							
ES1831696-017	SRT-QCA106	EP074: Benzene	71-43-2	2.5 mg/kg	86.0	70	130
		EP074: Toluene	108-88-3	2.5 mg/kg	80.1	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 2004750)							
ES1831722-002	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	2.5 mg/kg	74.8	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	80.0	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 2016917)							
ES1831696-017	SRT-QCA106	EP074: 1.1-Dichloroethene	75-35-4	2.5 mg/kg	81.2	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	88.3	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 2004750)							
ES1831722-002	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	85.8	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 2016917)							
ES1831696-017	SRT-QCA106	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	80.1	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2003252)							
ES1831676-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	98.5	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	114	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2016898)							
ES1831696-017	SRT-QCA106	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	97.0	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	113	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2003251)							
ES1831676-001	Anonymous	EP071: C10 - C14 Fraction	----	523 mg/kg	110	73	137

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2003251) - continued							
ES1831676-001	Anonymous	EP071: C15 - C28 Fraction	----	2319 mg/kg	119	53	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	121	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2003344)							
ES1831662-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	91.0	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2004751)							
ES1831722-002	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	88.4	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2016897)							
ES1831696-017	SRT-QCA106	EP071: C10 - C14 Fraction	----	523 mg/kg	88.4	73	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	115	53	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	129	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2016916)							
ES1831696-017	SRT-QCA106	EP080: C6 - C9 Fraction	----	32.5 mg/kg	85.4	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2003251)							
ES1831676-001	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	110	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	114	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	113	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2003344)							
ES1831662-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	112	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2004751)							
ES1831722-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	93.6	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2016897)							
ES1831696-017	SRT-QCA106	EP071: >C10 - C16 Fraction	----	860 mg/kg	101	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	124	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	112	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2016916)							
ES1831696-017	SRT-QCA106	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	85.9	70	130
EP080: BTEXN (QCLot: 2003344)							
ES1831662-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	76.0	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	79.2	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	75.7	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	76.0	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	77.6	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	76.1	70	130
EP080: BTEXN (QCLot: 2004751)							

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 2004751) - continued							
ES1831722-002	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	77.4	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	76.9	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	78.1	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	76.8	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	78.4	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	72.1	70	130
EP080: BTEXN (QCLot: 2016916)							
ES1831696-017	SRT-QCA106	EP080: Benzene	71-43-2	2.5 mg/kg	76.2	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	78.6	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	78.5	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	80.3	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	82.0	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	80.5	70	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 2008263)							
ES1831667-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	99.0	70	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	100	70	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	99.4	70	130
		EG020A-T: Copper	7440-50-8	1 mg/L	98.2	70	130
		EG020A-T: Lead	7439-92-1	1 mg/L	104	70	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	98.9	70	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	100	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2004297)							
ES1831585-010	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	100	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2002627)							
ES1831437-002	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	102	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2002627)							
ES1831437-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	98.5	70	130
EP080: BTEXN (QCLot: 2002627)							
ES1831437-002	Anonymous	EP080: Benzene	71-43-2	25 µg/L	97.3	70	130
		EP080: Toluene	108-88-3	25 µg/L	94.1	70	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	99.4	70	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080: BTEXN (QCLot: 2002627) - continued							
ES1831437-002	Anonymous	EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	102	70	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	104	70	130
		EP080: Naphthalene	91-20-3	25 µg/L	86.7	70	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES1831696**	Page	: 1 of 14
Amendment	: **1**		
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Telephone	: +61-2-8784 8555
Project	: Sydney Metro	Date Samples Received	: 24-Oct-2018
Site	: 1791865-SM TSE	Issue Date	: 07-Nov-2018
Sampler	: ----	No. of samples received	: 21
Order number	: .	No. of samples analysed	: 9

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.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068T: Organophosphorus Pesticide Surrogate	ES1831696-018	SRT-RB106	**DEF**	78-48-8	64.0 %	67-111 %	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EP035G: Total Phenol by Discrete Analyser						
Soil Glass Jar - Unpreserved						
SRT-QCA106	05-Nov-2018	03-Nov-2018	**2**	05-Nov-2018	03-Nov-2018	**2**
EP074A: Monocyclic Aromatic Hydrocarbons						
Soil Glass Jar - Unpreserved						
SRT-QCA106	02-Nov-2018	27-Oct-2018	**6**	02-Nov-2018	27-Oct-2018	**6**
EP074B: Oxygenated Compounds						
Soil Glass Jar - Unpreserved						
SRT-QCA106	02-Nov-2018	27-Oct-2018	**6**	02-Nov-2018	27-Oct-2018	**6**
EP074C: Sulfonated Compounds						
Soil Glass Jar - Unpreserved						
SRT-QCA106	02-Nov-2018	27-Oct-2018	**6**	02-Nov-2018	27-Oct-2018	**6**
EP074D: Fumigants						
Soil Glass Jar - Unpreserved						
SRT-QCA106	02-Nov-2018	27-Oct-2018	**6**	02-Nov-2018	27-Oct-2018	**6**
EP074E: Halogenated Aliphatic Compounds						
Soil Glass Jar - Unpreserved						
SRT-QCA106	02-Nov-2018	27-Oct-2018	**6**	02-Nov-2018	27-Oct-2018	**6**
EP074F: Halogenated Aromatic Compounds						
Soil Glass Jar - Unpreserved						
SRT-QCA106	02-Nov-2018	27-Oct-2018	**6**	02-Nov-2018	27-Oct-2018	**6**
EP074G: Trihalomethanes						
Soil Glass Jar - Unpreserved						
SRT-QCA106	02-Nov-2018	27-Oct-2018	**6**	02-Nov-2018	27-Oct-2018	**6**
EP074H: Naphthalene						
Soil Glass Jar - Unpreserved						
SRT-QCA106	02-Nov-2018	27-Oct-2018	**6**	02-Nov-2018	27-Oct-2018	**6**
EP080/071: Total Petroleum Hydrocarbons						
Soil Glass Jar - Unpreserved						
SRT-TB106, SRT-TS106, Trip Spike Control	----	----	----	30-Oct-2018	29-Oct-2018	**1**

Matrix: **SOIL**

Method / Container / Client Sample ID(s)		Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved							
SRT-TB106, Trip Spike Control	SRT-TS106,	----	----	----	30-Oct-2018	29-Oct-2018	**1**
EP080: BTEXN							
Soil Glass Jar - Unpreserved							
SRT-TB106, Trip Spike Control	SRT-TS106,	----	----	----	30-Oct-2018	29-Oct-2018	**1**

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Moisture Content	2	22	9.09	10.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

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

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

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

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

Matrix: **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

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
EA029-A: pH Measurements								
Snap Lock Bag - frozen (EA029)								
SRT-BH415-4.0,	SRT-BH419-3.0	**20-Oct-2018**	**01-Nov-2018**	15-Jul-2021	✓	**01-Nov-2018**	30-Jan-2019	✓
EA029-B: Acidity Trail								
Snap Lock Bag - frozen (EA029)								
SRT-BH415-4.0,	SRT-BH419-3.0	**20-Oct-2018**	**01-Nov-2018**	15-Jul-2021	✓	**01-Nov-2018**	30-Jan-2019	✓
EA029-C: Sulfur Trail								
Snap Lock Bag - frozen (EA029)								
SRT-BH415-4.0,	SRT-BH419-3.0	**20-Oct-2018**	**01-Nov-2018**	15-Jul-2021	✓	**01-Nov-2018**	30-Jan-2019	✓
EA029-D: Calcium Values								
Snap Lock Bag - frozen (EA029)								
SRT-BH415-4.0,	SRT-BH419-3.0	**20-Oct-2018**	**01-Nov-2018**	15-Jul-2021	✓	**01-Nov-2018**	30-Jan-2019	✓
EA029-E: Magnesium Values								
Snap Lock Bag - frozen (EA029)								
SRT-BH415-4.0,	SRT-BH419-3.0	**20-Oct-2018**	**01-Nov-2018**	15-Jul-2021	✓	**01-Nov-2018**	30-Jan-2019	✓
EA029-F: Excess Acid Neutralising Capacity								
Snap Lock Bag - frozen (EA029)								
SRT-BH415-4.0,	SRT-BH419-3.0	**20-Oct-2018**	**01-Nov-2018**	15-Jul-2021	✓	**01-Nov-2018**	30-Jan-2019	✓
EA029-G: Retained Acidity								
Snap Lock Bag - frozen (EA029)								
SRT-BH415-4.0,	SRT-BH419-3.0	**20-Oct-2018**	**01-Nov-2018**	15-Jul-2021	✓	**01-Nov-2018**	30-Jan-2019	✓
EA029-H: Acid Base Accounting								
Snap Lock Bag - frozen (EA029)								
SRT-BH415-4.0,	SRT-BH419-3.0	**20-Oct-2018**	**01-Nov-2018**	15-Jul-2021	✓	**01-Nov-2018**	30-Jan-2019	✓
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
SRT-QCA106		**20-Oct-2018**	**----**	----	----	**02-Nov-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EA055)								
SRT-BH415-0.5,	SRT-BH419-1.05	**20-Oct-2018**	**----**	----	----	**26-Oct-2018**	03-Nov-2018	✓
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Snap Lock Bag: Separate bag received (EA200)								
SRT-BH415-0.5,	SRT-BH419-1.05	**20-Oct-2018**	**----**	----	----	**30-Oct-2018**	18-Apr-2019	✓
EA200N: Asbestos Quantification (non-NATA)								
Snap Lock Bag: Separate bag received (EA200N)								
SRT-BH415-0.5,	SRT-BH419-1.05	**20-Oct-2018**	**----**	----	----	**30-Oct-2018**	18-Apr-2019	✓
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
SRT-QCA106		**20-Oct-2018**	**02-Nov-2018**	18-Apr-2019	✓	**03-Nov-2018**	18-Apr-2019	✓
Soil Glass Jar - Unpreserved (EG005T)								
SRT-BH415-0.5,	SRT-BH419-1.05	**20-Oct-2018**	**31-Oct-2018**	18-Apr-2019	✓	**31-Oct-2018**	18-Apr-2019	✓

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
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	17-Nov-2018	✓	**03-Nov-2018**	17-Nov-2018	✓
Soil Glass Jar - Unpreserved (EG035T) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**31-Oct-2018**	17-Nov-2018	✓	**31-Oct-2018**	17-Nov-2018	✓
EP035G: Total Phenol by Discrete Analyser							
Soil Glass Jar - Unpreserved (EP035G) SRT-QCA106	**20-Oct-2018**	**05-Nov-2018**	03-Nov-2018	×	**05-Nov-2018**	03-Nov-2018	×
Soil Glass Jar - Unpreserved (EP035G) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**26-Oct-2018**	03-Nov-2018	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	03-Nov-2018	✓	**04-Nov-2018**	12-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP066) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**30-Oct-2018**	05-Dec-2018	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	03-Nov-2018	✓	**04-Nov-2018**	12-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP068) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**30-Oct-2018**	05-Dec-2018	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	03-Nov-2018	✓	**04-Nov-2018**	12-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP068) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**30-Oct-2018**	05-Dec-2018	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP074) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	27-Oct-2018	×	**02-Nov-2018**	27-Oct-2018	×
Soil Glass Jar - Unpreserved (EP074) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**26-Oct-2018**	27-Oct-2018	✓
EP074B: Oxygenated Compounds							
Soil Glass Jar - Unpreserved (EP074) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	27-Oct-2018	×	**02-Nov-2018**	27-Oct-2018	×
Soil Glass Jar - Unpreserved (EP074) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**26-Oct-2018**	27-Oct-2018	✓
EP074C: Sulfonated Compounds							
Soil Glass Jar - Unpreserved (EP074) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	27-Oct-2018	×	**02-Nov-2018**	27-Oct-2018	×
Soil Glass Jar - Unpreserved (EP074) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**26-Oct-2018**	27-Oct-2018	✓

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
EP074D: Fumigants								
Soil Glass Jar - Unpreserved (EP074) SRT-QCA106		**20-Oct-2018**	**02-Nov-2018**	27-Oct-2018	×	**02-Nov-2018**	27-Oct-2018	×
Soil Glass Jar - Unpreserved (EP074) SRT-BH415-0.5,	SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**26-Oct-2018**	27-Oct-2018	✓
EP074E: Halogenated Aliphatic Compounds								
Soil Glass Jar - Unpreserved (EP074) SRT-QCA106		**20-Oct-2018**	**02-Nov-2018**	27-Oct-2018	×	**02-Nov-2018**	27-Oct-2018	×
Soil Glass Jar - Unpreserved (EP074) SRT-BH415-0.5,	SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**26-Oct-2018**	27-Oct-2018	✓
EP074F: Halogenated Aromatic Compounds								
Soil Glass Jar - Unpreserved (EP074) SRT-QCA106		**20-Oct-2018**	**02-Nov-2018**	27-Oct-2018	×	**02-Nov-2018**	27-Oct-2018	×
Soil Glass Jar - Unpreserved (EP074) SRT-BH415-0.5,	SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**26-Oct-2018**	27-Oct-2018	✓
EP074G: Trihalomethanes								
Soil Glass Jar - Unpreserved (EP074) SRT-QCA106		**20-Oct-2018**	**02-Nov-2018**	27-Oct-2018	×	**02-Nov-2018**	27-Oct-2018	×
Soil Glass Jar - Unpreserved (EP074) SRT-BH415-0.5,	SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**26-Oct-2018**	27-Oct-2018	✓
EP074H: Naphthalene								
Soil Glass Jar - Unpreserved (EP074) SRT-QCA106		**20-Oct-2018**	**02-Nov-2018**	27-Oct-2018	×	**02-Nov-2018**	27-Oct-2018	×
Soil Glass Jar - Unpreserved (EP074) SRT-BH415-0.5,	SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**26-Oct-2018**	27-Oct-2018	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM)) SRT-QCA106		**20-Oct-2018**	**02-Nov-2018**	03-Nov-2018	✓	**03-Nov-2018**	12-Dec-2018	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) SRT-BH415-0.5,	SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**29-Oct-2018**	05-Dec-2018	✓
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080) SRT-TB106, Trip Spike Control	SRT-TS106,	**15-Oct-2018**	**29-Oct-2018**	29-Oct-2018	✓	**30-Oct-2018**	29-Oct-2018	×
Soil Glass Jar - Unpreserved (EP080) SRT-QCA106		**20-Oct-2018**	**02-Nov-2018**	03-Nov-2018	✓	**02-Nov-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP080) SRT-BH415-0.5,	SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**26-Oct-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP071) SRT-BH415-0.5,	SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**29-Oct-2018**	05-Dec-2018	✓

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080) SRT-TB106, SRT-TS106, Trip Spike Control	**15-Oct-2018**	**29-Oct-2018**	29-Oct-2018	✓	**30-Oct-2018**	29-Oct-2018	×
Soil Glass Jar - Unpreserved (EP080) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	03-Nov-2018	✓	**02-Nov-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP080) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**26-Oct-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP071) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**29-Oct-2018**	05-Dec-2018	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) SRT-TB106, SRT-TS106, Trip Spike Control	**15-Oct-2018**	**29-Oct-2018**	29-Oct-2018	✓	**30-Oct-2018**	29-Oct-2018	×
Soil Glass Jar - Unpreserved (EP080) SRT-QCA106	**20-Oct-2018**	**02-Nov-2018**	03-Nov-2018	✓	**02-Nov-2018**	03-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP080) SRT-BH415-0.5, SRT-BH419-1.05	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**26-Oct-2018**	03-Nov-2018	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) SRT-RB106	**20-Oct-2018**	**30-Oct-2018**	18-Apr-2019	✓	**30-Oct-2018**	18-Apr-2019	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) SRT-RB106	**20-Oct-2018**	**----**	----	----	**26-Oct-2018**	17-Nov-2018	✓
EP066: Polychlorinated Biphenyls (PCB)							
Amber Glass Bottle - Unpreserved (EP066) SRT-RB106	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**30-Oct-2018**	05-Dec-2018	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068) SRT-RB106	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**30-Oct-2018**	05-Dec-2018	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068) SRT-RB106	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**30-Oct-2018**	05-Dec-2018	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) SRT-RB106	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**29-Oct-2018**	05-Dec-2018	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
SRT-RB106	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**30-Oct-2018**	05-Dec-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
SRT-RB106	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**26-Oct-2018**	03-Nov-2018	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
SRT-RB106	**20-Oct-2018**	**26-Oct-2018**	27-Oct-2018	✓	**30-Oct-2018**	05-Dec-2018	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
SRT-RB106	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**26-Oct-2018**	03-Nov-2018	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
SRT-RB106	**20-Oct-2018**	**26-Oct-2018**	03-Nov-2018	✓	**26-Oct-2018**	03-Nov-2018	✓

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	22	**9.09**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	17	**17.65**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	3	17	**17.65**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	3	17	**17.65**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	3	25	**12.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	17	**17.65**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	25	**16.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	7	**28.57**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	2	17	**11.76**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	17	**11.76**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	17	**11.76**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	17	**11.76**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	25	**12.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	7	**28.57**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	2	17	**11.76**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	17	**11.76**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	17	**11.76**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	17	**11.76**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	25	**12.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	7	**28.57**	**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		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	2	17	11.76	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	17	11.76	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	17	11.76	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035G	2	25	8.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	17	11.76	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	25	12.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	7	28.57	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	3	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	0.00	5.00	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	3	0.00	5.00	×	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Polychlorinated Biphenyls (PCB)	EP066	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	SOIL	In house: Referenced to Ahern et al 2004 - a suspension peroxide oxidation method following the 'sulfur trail' by determining the level of 1M KCL extractable sulfur and the sulfur level after oxidation of soil sulphides. The 'acidity trail' is followed by measurement of TAA, TPA and TSA. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5.
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Asbestos Identification in Soils	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Asbestos Classification and Quantitation per NEPM 2013	* EA200N	SOIL	Asbestos Classification and Quantitation per NEPM 2013 with Confirmation of Identification by AS 4964 - 2004 Gravimetric determination of Asbestos Containing Material, Fibrous Asbestos, Asbestos Fines and sample weight and calculation of percentage concentrations per NEPM protocols. Asbestos (Fines and Fibrous FA+AF) is reported as the equivalent weight in the sample received after accounting for sub-sampling (where applicable for the <7mm and/or <2mm fractions).
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, 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 (2013) Schedule B(3)
Total Phenol By Discrete Analyser	EP035G	SOIL	In house: Referenced to APHA 5530 B&D Steam distillable Phenols are reacted with 4-aminoantipyrine. The resultant colour intensity is measured by Seal
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270D 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 (2013) Schedule B(3) (Method 504)
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270D 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 (2013) Schedule B(3) (Method 504,505)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM amended 2013.
Volatile Organic Compounds	EP074	SOIL	In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 501)

Analytical Methods	Method	Matrix	Method Descriptions
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D. 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 (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM amended 2013.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The 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 (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample 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 (2013) Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample 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 (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A 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 the QC requirements of NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Drying at 85 degrees, bagging and labelling (ASS)	EN020PR	SOIL	In house
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 (2013) Schedule B(3) (Method 202)
Phenols After Microdistillation	EP035D	SOIL	In house: Referenced to APHA 5530 A, B&D. pH adjusted Steam distillable Phenolic compounds. The resultant colour intensity is measured by Discrete Analyser.

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.
Digestion for Total Recoverable Metals	EN25	WATER	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 (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES1832028**

Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: RBonetti@golder.com.au	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9478 3901	Facsimile	: +61-2-8784 8500
Project	: SYDNEY METRO	Page	: 1 of 3
Order number	: ----	Quote number	: ES2017GOLASS0019 (SY/698/17 C V4)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 29-Oct-2018 09:00	Issue Date	: 29-Oct-2018
Client Requested Due Date	: 05-Nov-2018	Scheduled Reporting Date	: **05-Nov-2018**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: 4.1' C
Receipt Detail	:	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
- **REBATCH OF ES1829955 & ES1830703**
- **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 absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.

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	Client sampling date / time	Client sample ID	SOIL - EG005C Leachable Metals by ICPAES	SOIL - EG035C Leachable Mercury	SOIL - EN33a TCLP Leachate	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - EP231X PFAS - Full Suite (28 analytes)
ES1832028-001	06-Oct-2018 00:00	BH420 1.0	✓	✓	✓		
ES1832028-002	06-Oct-2018 00:00	BH412 0.5			✓	✓	
ES1832028-003	06-Oct-2018 00:00	BH416 0.25	✓		✓		
ES1832028-004	06-Oct-2018 00:00	BH422 0.5	✓		✓	✓	
ES1832028-005	06-Oct-2018 00:00	BH426 0.1	✓		✓		
ES1832028-006	06-Oct-2018 00:00	BH426 1	✓		✓		
ES1832028-007	06-Oct-2018 00:00	BH421 3.0			✓		✓
ES1832028-008	13-Oct-2018 00:00	BH414 0.4	✓		✓	✓	
ES1832028-009	13-Oct-2018 00:00	BH423 0.5	✓		✓	✓	
ES1832028-010	13-Oct-2018 00:00	BH425 0.15	✓		✓	✓	

Proactive Holding Time Report

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

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

Method / Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received Date	Samples Received Evaluation	Instructions Received Date	Instructions Received Evaluation
EN33a: TCLP for Non & Semivolatile Analytes							
BH412 0.5	Non-Volatile Leach: 14 day HT(ε	20-Oct-2018	----	29-Oct-2018	×	----	----
BH414 0.4	Non-Volatile Leach: 14 day HT(ε	27-Oct-2018	----	29-Oct-2018	×	----	----
BH422 0.5	Non-Volatile Leach: 14 day HT(ε	20-Oct-2018	----	29-Oct-2018	×	----	----
BH423 0.5	Non-Volatile Leach: 14 day HT(ε	27-Oct-2018	----	29-Oct-2018	×	----	----
BH425 0.15	Non-Volatile Leach: 14 day HT(ε	27-Oct-2018	----	29-Oct-2018	×	----	----

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	au_accountspayable@golder.com.au

BARRY HOUSTON

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

RITA BONETTI

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

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1832028**	Page	: 1 of 9
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: SYDNEY METRO	Date Samples Received	: 29-Oct-2018 09:00
Order number	: .	Date Analysis Commenced	: 31-Oct-2018
C-O-C number	: ----	Issue Date	: 05-Nov-2018 16:40
Sampler	: ----		
Site	: ----		
Quote number	: SY/698/17 C V4		
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. 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*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini		Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by 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.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH420 1.0	BH412 0.5	BH416 0.25	BH422 0.5	BH426 0.1
			Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit	ES1832028-001	ES1832028-002	ES1832028-003	ES1832028-004	ES1832028-005
				Result	Result	Result	Result	Result
EN33: TCLP Leach								
Initial pH	----	0.1	pH Unit	**7.4**	**11.2**	**9.0**	**9.4**	**9.2**
After HCl pH	----	0.1	pH Unit	**1.4**	**1.9**	**5.4**	**1.4**	**1.6**
Extraction Fluid Number	----	1	-	**1**	**1**	**2**	**1**	**1**
Final pH	----	0.1	pH Unit	**5.1**	**7.7**	**5.6**	**5.0**	**5.6**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH426 1	BH421 3.0	BH414 0.4	BH423 0.5	BH425 0.15
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832028-006	ES1832028-007	ES1832028-008	ES1832028-009	ES1832028-010
					Result	Result	Result	Result	Result
EN33: TCLP Leach									
Initial pH	----	0.1	pH Unit		**9.0**	**7.2**	**10.7**	**8.4**	**9.1**
After HCl pH	----	0.1	pH Unit		**1.5**	**1.4**	**1.6**	**1.5**	**1.5**
Extraction Fluid Number	----	1	-		**1**	**1**	**1**	**1**	**1**
Final pH	----	0.1	pH Unit		**5.0**	**5.0**	**6.2**	**5.2**	**5.2**

Analytical Results

Sub-Matrix: TCLP LEACHATE (Matrix: WATER)				Client sample ID	BH420 1.0	BH412 0.5	BH416 0.25	BH422 0.5	BH426 0.1
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00	06-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832028-001	ES1832028-002	ES1832028-003	ES1832028-004	ES1832028-005
					Result	Result	Result	Result	Result
EG005C: Leachable Metals by ICPAES									
Lead	7439-92-1	0.1	mg/L		**1.1**	**----**	**6.8**	**0.1**	**0.1**
EG035C: Leachable Mercury by FIMS									
Mercury	7439-97-6	0.0010	mg/L		<0.0010	**----**	**----**	**----**	**----**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Benzo(a)pyrene	50-32-8	0.5	µg/L		**----**	<0.5	**----**	<0.5	**----**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**----**	**24.6**	**----**	**24.3**	**----**
2-Chlorophenol-D4	93951-73-6	1.0	%		**----**	**67.5**	**----**	**48.6**	**----**
2.4.6-Tribromophenol	118-79-6	1.0	%		**----**	**90.3**	**----**	**83.8**	**----**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**----**	**88.2**	**----**	**82.7**	**----**
Anthracene-d10	1719-06-8	1.0	%		**----**	**95.4**	**----**	**88.2**	**----**
4-Terphenyl-d14	1718-51-0	1.0	%		**----**	**88.9**	**----**	**82.7**	**----**

Analytical Results

Sub-Matrix: TCLP LEACHATE (Matrix: WATER)				Client sample ID	BH426 1	BH421 3.0	BH414 0.4	BH423 0.5	BH425 0.15
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832028-006	ES1832028-007	ES1832028-008	ES1832028-009	ES1832028-010
					Result	Result	Result	Result	Result
EG005C: Leachable Metals by ICPAES									
Lead	7439-92-1	0.1	mg/L		**0.1**	----	**5.6**	**0.2**	**2.2**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Benzo(a)pyrene	50-32-8	0.5	µg/L		----	----	<0.5	<0.5	<0.5
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		----	<0.02	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	<0.01	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		----	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		----	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		----	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	<0.02	----	----	----

Analytical Results

Sub-Matrix: TCLP LEACHATE (Matrix: WATER)				Client sample ID	BH426 1	BH421 3.0	BH414 0.4	BH423 0.5	BH425 0.15
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832028-006	ES1832028-007	ES1832028-008	ES1832028-009	ES1832028-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
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	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		----	<0.01	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		----	----	**27.4**	**22.3**	**25.1**
2-Chlorophenol-D4	93951-73-6	1.0	%		----	----	**63.9**	**45.6**	**50.8**
2.4.6-Tribromophenol	118-79-6	1.0	%		----	----	**90.0**	**73.6**	**81.8**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		----	----	**71.6**	**79.4**	**87.8**
Anthracene-d10	1719-06-8	1.0	%		----	----	**73.5**	**67.6**	**71.8**

Analytical Results

Sub-Matrix: TCLP LEACHATE (Matrix: WATER)				Client sample ID	BH426 1	BH421 3.0	BH414 0.4	BH423 0.5	BH425 0.15
				Client sampling date / time	06-Oct-2018 00:00	06-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00	13-Oct-2018 00:00
Compound	CAS Number	LOR	Unit		ES1832028-006	ES1832028-007	ES1832028-008	ES1832028-009	ES1832028-010
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued									
4-Terphenyl-d14	1718-51-0	1.0	%		----	----	87.0	82.5	87.5
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		----	116	----	----	----
13C8-PFOA	----	0.02	%		----	87.3	----	----	----

Surrogate Control Limits

Sub-Matrix: **TCLP LEACHATE**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES1832028**	Page	: 1 of 6
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Contact	: Customer Services ES
Address	: LEVEL 1, 124 PACIFIC HIGHWAY ST LEONARDS NSW, AUSTRALIA 2065	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9478 3900	Telephone	: +61-2-8784 8555
Project	: SYDNEY METRO	Date Samples Received	: 29-Oct-2018
Order number	: .	Date Analysis Commenced	: 31-Oct-2018
C-O-C number	: ----	Issue Date	: 05-Nov-2018
Sampler	: ----		
Site	: ----		
Quote number	: SY/698/17 C V4		
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. 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*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini		Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005C: Leachable Metals by ICPAES (QC Lot: 2015471)									
ES1832028-001	BH420 1.0	EG005C: Lead	7439-92-1	0.1	mg/L	1.1	1.1	0.00	0% - 50%
ES1832062-012	Anonymous	EG005C: Lead	7439-92-1	0.1	mg/L	35.9	35.7	0.752	0% - 20%
EG035C: Leachable Mercury by FIMS (QC Lot: 2014696)									
ES1831381-002	Anonymous	EG035C: Mercury	7439-97-6	0.0001	mg/L	<0.0010	<0.0010	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2014800)									
ES1832028-007	BH421 3.0	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2014800)									
ES1832028-007	BH421 3.0	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2014800)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2014800) - continued									
ES1832028-007	BH421 3.0	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2014800)									
ES1832028-007	BH421 3.0	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 2014800)									
ES1832028-007	BH421 3.0	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit

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

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EN33: TCLP Leach (QCLot: 2011281)								
EN33a: Initial pH	----	0.1	pH Unit	1.0	----	----	----	----
EN33a: After HCl pH	----	0.1	pH Unit	1.0	----	----	----	----
EN33a: Final pH	----	0.1	pH Unit	1.0	----	----	----	----

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005C: Leachable Metals by ICPAES (QCLot: 2015471)								
EG005C: Lead	7439-92-1	0.1	mg/L	<0.1	0.1 mg/L	100	80	118
EG035C: Leachable Mercury by FIMS (QCLot: 2014696)								
EG035C: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	86.0	79	109
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2014453)								
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	77.0	63	117
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2014800)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.5 µg/L	90.2	70	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.5 µg/L	111	70	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.5 µg/L	84.0	70	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.5 µg/L	115	70	130
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.5 µg/L	101	70	130
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	98.8	70	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2014800)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	2.5 µg/L	113	70	130
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	108	70	130
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	127	70	130
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	91.8	70	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	118	70	130
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	101	70	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	92.2	70	130
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	121	70	130
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	78.2	70	130
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	109	70	130
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	97.4	70	150
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2014800)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	82.2	70	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2014800) - continued								
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	96.6	70	150
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	78.6	70	150
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	111	70	150
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	134	70	150
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	100	70	130
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	109	70	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2014800)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.5 µg/L	117	70	130
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.5 µg/L	99.0	70	130
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.5 µg/L	118	70	130
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.5 µg/L	89.6	70	130

Matrix Spike (MS) Report

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

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005C: Leachable Metals by ICPAES (QCLot: 2015471)							
ES1832028-003	BH416 0.25	EG005C: Lead	7439-92-1	1 mg/L	# Not Determined	70	130
EG035C: Leachable Mercury by FIMS (QCLot: 2014696)							
ES1831381-004	Anonymous	EG035C: Mercury	7439-97-6	0.01 mg/L	75.5	70	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2014800)							
ES1832028-007	BH421 3.0	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.5 µg/L	101	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.5 µg/L	114	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.5 µg/L	94.8	50	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.5 µg/L	128	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	123	50	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.5 µg/L	105	50	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2014800)							
ES1832028-007	BH421 3.0	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	95.8	50	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	125	50	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2014800) - continued							
ES1832028-007	BH421 3.0	EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	128	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	109	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	125	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	107	50	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	118	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	129	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	85.6	50	130
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	121	50	130
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	98.4	50	150
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2014800)							
ES1832028-007	BH421 3.0	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	99.2	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	112	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	85.8	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	1.25 µg/L	118	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	131	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	108	50	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	122	50	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2014800)							
ES1832028-007	BH421 3.0	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.5 µg/L	116	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.5 µg/L	121	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.5 µg/L	127	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.5 µg/L	106	50	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES1832028**	Page	: 1 of 6
Client	: **GOLDER ASSOCIATES**	Laboratory	: Environmental Division Sydney
Contact	: MS RITA BONETTI	Telephone	: +61-2-8784 8555
Project	: SYDNEY METRO	Date Samples Received	: 29-Oct-2018
Site	: ----	Issue Date	: 05-Nov-2018
Sampler	: ----	No. of samples received	: 10
Order number	: .	No. of samples analysed	: 10

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

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

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG005C: Leachable Metals by ICPAES	ES1832028--003	BH416 0.25	**Lead**	7439-92-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EN33: TCLP Leach						
Non-Volatile Leach: 14 day HT(e.g. SV organics)						
BH412 0.5, BH422 0.5	31-Oct-2018	20-Oct-2018	**11**	----	----	----
Non-Volatile Leach: 14 day HT(e.g. SV organics)						
BH414 0.4, BH423 0.5, BH425 0.15	31-Oct-2018	27-Oct-2018	**4**	----	----	----

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	7	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

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
EN33: TCLP Leach							
Non-Volatile Leach: 14 day HT(e.g. SV organics) (EN33a)							
BH412 0.5, BH422 0.5	**06-Oct-2018**	**31-Oct-2018**	20-Oct-2018	×	**----**	----	----
Non-Volatile Leach: 14 day HT(e.g. SV organics) (EN33a)							
BH414 0.4, BH423 0.5, BH425 0.15	**13-Oct-2018**	**31-Oct-2018**	27-Oct-2018	×	**----**	----	----
Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN33a)							
BH420 1.0, BH416 0.25, BH426 0.1, BH426 1, BH421 3.0	**06-Oct-2018**	**31-Oct-2018**	04-Apr-2019	✓	**----**	----	----

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005C: Leachable Metals by ICPAES							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG005C)							
BH420 1.0, BH416 0.25, BH422 0.5, BH426 0.1, BH426 1, BH414 0.4, BH423 0.5, BH425 0.15	**31-Oct-2018**	**02-Nov-2018**	29-Apr-2019	✓	**02-Nov-2018**	29-Apr-2019	✓
EG035C: Leachable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035C)							
BH420 1.0	**31-Oct-2018**	**----**	----	----	**01-Nov-2018**	28-Nov-2018	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
BH412 0.5, BH422 0.5, BH414 0.4, BH423 0.5, BH425 0.15	**31-Oct-2018**	**01-Nov-2018**	07-Nov-2018	✓	**01-Nov-2018**	11-Dec-2018	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
BH421 3.0	**31-Oct-2018**	**01-Nov-2018**	29-Apr-2019	✓	**01-Nov-2018**	29-Apr-2019	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
BH421 3.0	**31-Oct-2018**	**01-Nov-2018**	29-Apr-2019	✓	**01-Nov-2018**	29-Apr-2019	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
BH421 3.0	**31-Oct-2018**	**01-Nov-2018**	29-Apr-2019	✓	**01-Nov-2018**	29-Apr-2019	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
BH421 3.0	**31-Oct-2018**	**01-Nov-2018**	29-Apr-2019	✓	**01-Nov-2018**	29-Apr-2019	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
BH421 3.0	**31-Oct-2018**	**01-Nov-2018**	29-Apr-2019	✓	**01-Nov-2018**	29-Apr-2019	✓

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	
Method Blanks (MB)							
TCLP for Non & Semivolatile Analytes	EN33a	1	11	9.09	9.09	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Leachable Mercury by FIMS	EG035C	1	9	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Leachable Metals by ICPAES	EG005C	2	14	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	7	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	5	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Leachable Mercury by FIMS	EG035C	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Leachable Metals by ICPAES	EG005C	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Leachable Mercury by FIMS	EG035C	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Leachable Metals by ICPAES	EG005C	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Leachable Mercury by FIMS	EG035C	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Leachable Metals by ICPAES	EG005C	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	7	0.00	5.00	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	5	20.00	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
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 (2013) Schedule B(3)
Leachable Mercury by FIMS	EG035C	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the TCLP solution. The 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 (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In house: Direct injection analysis of fresh waters after dilution (1:1) with methanol. 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. This method complies with the quality control definitions as stated in QSM 5.1. Data is reviewed in line with the DQOs as stated in QSM5.1

Preparation Methods	Method	Matrix	Method Descriptions
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 (2013) Schedule B(3)
TCLP for Non & Semivolatile Analytes	EN33a	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.
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 anaylsis.
Separatory Funnel Extraction of Liquids	ORG14	SOIL	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.

CHAIN OF CUSTODY & ANALYSIS REQUEST

Page _1_ of __1__

Envirolab
12 Ashley Street, Chatswood,
NSW 2067
T +61 2 9910 6200

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:			

Lab ID Number: *(please quote on correspondence)*

Site: Waterloo Station

Lab ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	S-26 (TRH / BTEXN / PAH / 8 Metals)	S-12 (OCPs / OPPs)	EP074 (VOCs)	EP066 (PCBs)	EP035G (Phenols)	EA200 (asbestos – absence / presence)	EA200N (asbestos NEPM)	EILs (pH / CEC \ clay content)	EA037 (ASS Field Screen)	S-18 (TRH C6-C10 / BTEXN)	W-26 (TRH / BTEXN / PAH / 8 Metals)
1	QCB100	6/10/2018	x			1	x												
2	QCB101	6/10/2018	x			1	x												
3	QCB102	6/10/2018	x			1	x												
4	QCB103	7/10/2018	x			1	x												

Additional Report Formats

NEPM
CSV
ESDAT
DQO
GO, Guidelines _____
_____
Others _____

Notes/Guidelines/LOR/ Special instructions

ENVIROLAB — Envirolab Services, 12 Ashley St, Chatswood NSW 2067, Ph: (02) 9910 6200

Job No: 202499
Date Received: 8/10/2018
Time Received: 16:00
Received By: R
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished By: T. Anning	Date/Time: 8/10/18	Received By: Ray ES	Date/Time: 8/10/2018 1600
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (date)

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Golder Associates Pty Ltd
Attention	Barry Houston

Sample Login Details

Your reference	Sydney Metro
Envirolab Reference	202499
Date Sample Received	08/10/2018
Date Instructions Received	08/10/2018
Date Results Expected to be Reported	On Hold

Sample Condition

Samples received in appropriate condition for analysis	YES
No. of Samples Provided	4 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	9.2
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

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Sample ID	VOCs in soil	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	SVOCs in Soil	On Hold
QCB100						✓
QCB101						✓
QCB102						✓
QCB103						✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.

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CERTIFICATE OF ANALYSIS 202499

Client Details

Client	Golder Associates Pty Ltd
Attention	Barry Houston
Address	124 Pacific Highway, St Leonards, NSW, 2065

Sample Details

Your Reference	**Sydney Metro**
Number of Samples	4 Soil
Date samples received	08/10/2018
Date completed instructions received	10/10/2018

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	17/10/2018
Date of Issue	17/10/2018

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Asbestos Approved By
Analysed by Asbestos Approved Identifier: Aida Marner
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Jeremy Faircloth, Organics Supervisor
Leon Ow, Chemist
Lucy Zhu, Asbsestos Analyst
Nick Sarlamis, Inorganics Supervisor
Steven Luong, Senior Chemist

Authorised By



Jacinta Hurst, Laboratory Manager

VOCs in soil		
Our Reference		202499-2
Your Reference	UNITS	QCB101
Date Sampled		06/10/2018
Type of sample		Soil
Date extracted	-	12/10/2018
Date analysed	-	15/10/2018
Dichlorodifluoromethane	mg/kg	<1
Chloromethane	mg/kg	<1
Vinyl Chloride	mg/kg	<1
Bromomethane	mg/kg	<1
Chloroethane	mg/kg	<1
Trichlorofluoromethane	mg/kg	<1
1,1-Dichloroethene	mg/kg	<1
trans-1,2-dichloroethene	mg/kg	<1
1,1-dichloroethane	mg/kg	<1
cis-1,2-dichloroethene	mg/kg	<1
bromochloromethane	mg/kg	<1
chloroform	mg/kg	<1
2,2-dichloropropane	mg/kg	<1
1,2-dichloroethane	mg/kg	<1
1,1,1-trichloroethane	mg/kg	<1
1,1-dichloropropene	mg/kg	<1
Cyclohexane	mg/kg	<1
carbon tetrachloride	mg/kg	<1
Benzene	mg/kg	<0.2
dibromomethane	mg/kg	<1
1,2-dichloropropane	mg/kg	<1
trichloroethene	mg/kg	<1
bromodichloromethane	mg/kg	<1
trans-1,3-dichloropropene	mg/kg	<1
cis-1,3-dichloropropene	mg/kg	<1
1,1,2-trichloroethane	mg/kg	<1
Toluene	mg/kg	<0.5
1,3-dichloropropane	mg/kg	<1
dibromochloromethane	mg/kg	<1
1,2-dibromoethane	mg/kg	<1
tetrachloroethene	mg/kg	<1
1,1,1,2-tetrachloroethane	mg/kg	<1
chlorobenzene	mg/kg	<1
Ethylbenzene	mg/kg	<1
bromoform	mg/kg	<1

VOCs in soil		
Our Reference		202499-2
Your Reference	UNITS	QCB101
Date Sampled		06/10/2018
Type of sample		Soil
m+p-xylene	mg/kg	<2
styrene	mg/kg	<1
1,1,2,2-tetrachloroethane	mg/kg	<1
o-Xylene	mg/kg	<1
1,2,3-trichloropropane	mg/kg	<1
isopropylbenzene	mg/kg	<1
bromobenzene	mg/kg	<1
n-propyl benzene	mg/kg	<1
2-chlorotoluene	mg/kg	<1
4-chlorotoluene	mg/kg	<1
1,3,5-trimethyl benzene	mg/kg	<1
tert-butyl benzene	mg/kg	<1
1,2,4-trimethyl benzene	mg/kg	<1
1,3-dichlorobenzene	mg/kg	<1
sec-butyl benzene	mg/kg	<1
1,4-dichlorobenzene	mg/kg	<1
4-isopropyl toluene	mg/kg	<1
1,2-dichlorobenzene	mg/kg	<1
n-butyl benzene	mg/kg	<1
1,2-dibromo-3-chloropropane	mg/kg	<1
1,2,4-trichlorobenzene	mg/kg	<1
hexachlorobutadiene	mg/kg	<1
1,2,3-trichlorobenzene	mg/kg	<1
Surrogate Dibromofluorometha	%	107
Surrogate aaa-Trifluorotoluene	%	78
Surrogate Toluene-d_8	%	98
Surrogate 4-Bromofluorobenzene	%	94

vTRH(C6-C10)/BTEXN in Soil				
Our Reference	UNITS	202499-2	202499-3	202499-4
Your Reference		QCB101	QCB102	QCB103
Date Sampled		06/10/2018	06/10/2018	07/10/2018
Type of sample		Soil	Soil	Soil
Date extracted	-	12/10/2018	12/10/2018	12/10/2018
Date analysed	-	15/10/2018	15/10/2018	15/10/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	78	81	92

svTRH (C10-C40) in Soil				
Our Reference		202499-2	202499-3	202499-4
Your Reference	UNITS	QCB101	QCB102	QCB103
Date Sampled		06/10/2018	06/10/2018	07/10/2018
Type of sample		Soil	Soil	Soil
Date extracted	-	12/10/2018	12/10/2018	12/10/2018
Date analysed	-	17/10/2018	17/10/2018	17/10/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	170	<100
TRH C_{29} - C_{36}	mg/kg	<100	170	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	270	<100
TRH >C_{34} -C_{40}	mg/kg	<100	190	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	470	<50
Surrogate o-Terphenyl	%	77	84	69

PAHs in Soil				
Our Reference		202499-2	202499-3	202499-4
Your Reference	UNITS	QCB101	QCB102	QCB103
Date Sampled		06/10/2018	06/10/2018	07/10/2018
Type of sample		Soil	Soil	Soil
Date extracted	-	12/10/2018	12/10/2018	12/10/2018
Date analysed	-	15/10/2018	15/10/2018	15/10/2018
Naphthalene	mg/kg	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	0.1	<0.1
Fluorene	mg/kg	<0.1	0.2	<0.1
Phenanthrene	mg/kg	<0.1	1.6	<0.1
Anthracene	mg/kg	<0.1	0.3	<0.1
Fluoranthene	mg/kg	<0.1	2.1	0.1
Pyrene	mg/kg	<0.1	2.0	0.1
Benzo(a)anthracene	mg/kg	<0.1	0.9	<0.1
Chrysene	mg/kg	<0.1	0.9	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	1	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.85	0.06
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.4	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.5	<0.1
Total +ve PAH's	mg/kg	<0.05	11	0.3
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	1.1	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	1.2	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	1.2	<0.5
Surrogate p-Terphenyl-d14	%	92	93	93

Organochlorine Pesticides in soil		
Our Reference		202499-2
Your Reference	UNITS	QCB101
Date Sampled		06/10/2018
Type of sample		Soil
Date extracted	-	12/10/2018
Date analysed	-	12/10/2018
HCB	mg/kg	<0.1
alpha-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Surrogate TCMX	%	87

Organophosphorus Pesticides		
Our Reference		202499-2
Your Reference	UNITS	QCB101
Date Sampled		06/10/2018
Type of sample		Soil
Date extracted	-	12/10/2018
Date analysed	-	12/10/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Chlorpyriphos	mg/kg	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Dichlorvos	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Ethion	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Parathion	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Surrogate TCMX	%	87

PCBs in Soil		
Our Reference		202499-2
Your Reference	UNITS	QCB101
Date Sampled		06/10/2018
Type of sample		Soil
Date extracted	-	12/10/2018
Date analysed	-	12/10/2018
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate TCLMX	%	87

Acid Extractable metals in soil				
Our Reference	UNITS	202499-2	202499-3	202499-4
Your Reference		QCB101	QCB102	QCB103
Date Sampled		06/10/2018	06/10/2018	07/10/2018
Type of sample		Soil	Soil	Soil
Date prepared	-	12/10/2018	12/10/2018	12/10/2018
Date analysed	-	12/10/2018	12/10/2018	12/10/2018
Arsenic	mg/kg	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	<1	10	<1
Copper	mg/kg	4	28	1
Lead	mg/kg	8	16	7
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	8	<1
Zinc	mg/kg	16	36	12

Misc Soil - Inorg		
Our Reference		202499-2
Your Reference	UNITS	QCB101
Date Sampled		06/10/2018
Type of sample		Soil
Date prepared	-	12/10/2018
Date analysed	-	12/10/2018
Total Phenolics (as Phenol)	mg/kg	<5

Moisture				
Our Reference		202499-2	202499-3	202499-4
Your Reference	UNITS	QCB101	QCB102	QCB103
Date Sampled		06/10/2018	06/10/2018	07/10/2018
Type of sample		Soil	Soil	Soil
Date prepared	-	12/10/2018	12/10/2018	12/10/2018
Date analysed	-	15/10/2018	15/10/2018	15/10/2018
Moisture	%	3.3	2.1	5.3

Asbestos ID - soils		
Our Reference		202499-2
Your Reference	UNITS	QCB101
Date Sampled		06/10/2018
Type of sample		Soil
Date analysed	-	15/10/2018
Sample mass tested	g	Approx. 25g
Sample Description	-	Beige sandy soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.

Method ID	Methodology Summary
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	202499-2
Date extracted	-			12/10/2018	2	12/10/2018	12/10/2018		12/10/2018	12/10/2018
Date analysed	-			15/10/2018	2	15/10/2018	15/10/2018		15/10/2018	15/10/2018
Dichlorodifluoromethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Chloromethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Vinyl Chloride	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Bromomethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Chloroethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Trichlorofluoromethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,1-Dichloroethene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
trans-1,2-dichloroethene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,1-dichloroethane	mg/kg	1	Org-014	<1	2	<1	<1	0	95	100
cis-1,2-dichloroethene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
bromochloromethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
chloroform	mg/kg	1	Org-014	<1	2	<1	<1	0	90	94
2,2-dichloropropane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,2-dichloroethane	mg/kg	1	Org-014	<1	2	<1	<1	0	85	90
1,1,1-trichloroethane	mg/kg	1	Org-014	<1	2	<1	<1	0	93	99
1,1-dichloropropene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Cyclohexane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
carbon tetrachloride	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-014	<0.2	2	<0.2	<0.2	0	[NT]	[NT]
dibromomethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,2-dichloropropane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
trichloroethene	mg/kg	1	Org-014	<1	2	<1	<1	0	76	81
bromodichloromethane	mg/kg	1	Org-014	<1	2	<1	<1	0	97	103
trans-1,3-dichloropropene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
cis-1,3-dichloropropene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,1,2-trichloroethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-014	<0.5	2	<0.5	<0.5	0	[NT]	[NT]
1,3-dichloropropane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
dibromochloromethane	mg/kg	1	Org-014	<1	2	<1	<1	0	94	100
1,2-dibromoethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
tetrachloroethene	mg/kg	1	Org-014	<1	2	<1	<1	0	80	86
1,1,1,2-tetrachloroethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
chlorobenzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
bromoform	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-014	<2	2	<2	<2	0	[NT]	[NT]
styrene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	202499-2
1,2,3-trichloropropane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
isopropylbenzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
bromobenzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
n-propyl benzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
2-chlorotoluene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
4-chlorotoluene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,3,5-trimethyl benzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
tert-butyl benzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,2,4-trimethyl benzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,3-dichlorobenzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
sec-butyl benzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,4-dichlorobenzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
4-isopropyl toluene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,2-dichlorobenzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
n-butyl benzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,2-dibromo-3-chloropropane	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,2,4-trichlorobenzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
hexachlorobutadiene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
1,2,3-trichlorobenzene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluorometha	%		Org-014	105	2	107	78	31	105	106
Surrogate aaa-Trifluorotoluene	%		Org-014	83	2	78	77	1	79	82
Surrogate Toluene-d_8	%		Org-014	96	2	98	100	2	99	99
Surrogate 4-Bromofluorobenzene	%		Org-014	96	2	94	87	8	96	94

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	202499-2
Date extracted	-			12/10/2018	2	12/10/2018	12/10/2018		12/10/2018	12/10/2018
Date analysed	-			15/10/2018	2	15/10/2018	15/10/2018		15/10/2018	15/10/2018
TRH C_6 - C_9	mg/kg	25	Org-016	<25	2	<25	<25	0	103	86
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	2	<25	<25	0	103	86
Benzene	mg/kg	0.2	Org-016	<0.2	2	<0.2	<0.2	0	118	92
Toluene	mg/kg	0.5	Org-016	<0.5	2	<0.5	<0.5	0	100	79
Ethylbenzene	mg/kg	1	Org-016	<1	2	<1	<1	0	99	84
m+p-xylene	mg/kg	2	Org-016	<2	2	<2	<2	0	100	88
o-Xylene	mg/kg	1	Org-016	<1	2	<1	<1	0	95	88
naphthalene	mg/kg	1	Org-014	<1	2	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	83	2	78	77	1	105	82

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Date analysed	-			17/10/2018	[NT]	[NT]	[NT]	[NT]	17/10/2018	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	115	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	117	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	115	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	117	[NT]
Surrogate o-Terphenyl	%		Org-003	115	[NT]	[NT]	[NT]	[NT]	128	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Date analysed	-			15/10/2018	[NT]	[NT]	[NT]	[NT]	15/10/2018	[NT]
Naphthalene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	120	[NT]
Phenanthrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	[NT]	[NT]	[NT]	[NT]	107	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	87	[NT]	[NT]	[NT]	[NT]	96	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Date analysed	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	97	[NT]
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	81	[NT]
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	83	[NT]
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-005	91	[NT]	[NT]	[NT]	[NT]	105	[NT]

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Date analysed	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	85	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Dimethoate	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Fenitrothion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Malathion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	81	[NT]
Parathion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Ronnel	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	87	[NT]
Surrogate TCMX	%		Org-008	91	[NT]	[NT]	[NT]	[NT]	87	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Date analysed	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCLMX	%		Org-006	91	[NT]	[NT]	[NT]	[NT]	87	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date prepared	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Date analysed	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	106	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	97	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]

QUALITY CONTROL: Misc Soil - Inorg					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Date analysed	-			12/10/2018	[NT]	[NT]	[NT]	[NT]	12/10/2018	[NT]
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	[NT]	[NT]	[NT]	[NT]	101	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Report Comments

Asbestos: A portion of the supplied sample was sub-sampled for asbestos analysis according to Envirolab procedures.
We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g of sample in its own container.
Note: Sample 202499-2 was sub-sampled from a jar provided by the client.

CHAIN OF CUSTODY & ANALYSIS REQUEST (COC05)

Page _1_ of __1__

Envirolab
12 Ashley Street, Chatswood,
NSW 2067
T +61 2 9910 6200

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro
Address:	124 Pacific Highway	Purchase Order No:	
	St Leonards NSW	Results Required Date:	5 day TAT
		Telephone:	0437 039 929 Fax:
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au
Quotation No:			

Lab ID Number: *(please quote on correspondence)*

Site: 1791865

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other ___	NO. OF CONTAINERS	ANALYSIS REQUESTED: HOLD	HOLD (FREEZE FOR ASS)	(TRH / BTEXN / PAH / 8 Metals)	OCPs / OPPs	VOCs	PCBs	Total Phenols	asbestos – absence / presence)					Notes/Guidelines/LOR/ Special instructions
	QCB106	20/10/2018	x			1			X	x	X	x	x						
																			#203759

Additional Report Formats

- ☐ NEPM
  - ✓CSV
  - ✓ESDAT
- ☐ DQO
- ☐ GO, Guidelines ---------
- ☐ Others _____

Relinquished By: Rita Bonneti	Date/Time: 22/10/2018	Received By: ELS Souraya	Date/Time: 231018 1550.
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10.10.2018 – primary reviewed)

Analysis Recd 251018 1450 Gwd

CHAIN OF CUSTODY & ANALYSIS REQUEST (COC02)

Envirolab
12 Ashley Street, Chatswood,
NSW 2067
T +61 2 9910 6200

Lab ID Number: *(please quote on correspondence)*

Site: 1791865

Company Name:	Golder Associates Pty Ltd	Project Name/No:	Sydney Metro		
Address:	124 Pacific Highway	Purchase Order No:			
	St Leonards NSW	Results Required Date:	5 day TAT		
		Telephone:	0437 039 929	Fax:	
Contact Name:	Rita Bonetti / Barry Houston	Email Results to:	rbonetti@golder.com.au, bhouston@golder.com.au		
Quotation No:					

ALS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	HOLD	HOLD (FREEZE FOR ASS)	(TRH / BTEXN / PAH / 8 Metals)	OCPs / OPPs	VOCs	PCBs	Total Phenols	asbestos – absence / presence)	
1	SRT-QCB106	20/10/2018	x			1									

ANALYSIS REQUESTED

Additional Report Formats

NEPM
☑ CSV
☑ ESDAT
DQO
GO, Guidelines ---------
Others _____

Notes/Guidelines/LOR/ Special instructions

ENVIROLAB

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 203759
Date Received: 23/10/18
Time Received: 1550
Received By: S.J
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished By:	Date/Time: 23/10/2018	Received By: ELS / Sourayh	Date/Time: 23/10/18 1550
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: *Yes / No*	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*

Comments / Subcontracting details: COC Golder review: SPD (10.10.2018 – primary reviewed)

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Golder Associates Pty Ltd
Attention	Rita Bonetti, B Houston

Sample Login Details

Your reference	Sydney Metro
Envirolab Reference	203759
Date Sample Received	23/10/2018
Date Instructions Received	23/10/2018
Date Results Expected to be Reported	On Hold

Sample Condition

Samples received in appropriate condition for analysis	YES
No. of Samples Provided	1 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	11.2
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	VOCs in soil	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Acid Extractable metalsin soil	Asbestos ID - soils	On Hold
STR-QCB106							✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.

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CERTIFICATE OF ANALYSIS 203759

Client Details

Client	Golder Associates Pty Ltd
Attention	Rita Bonetti, B Houston
Address	124 Pacific Highway, St Leonards, NSW, 2065

Sample Details

Your Reference	**Sydney Metro**
Number of Samples	1 Soil
Date samples received	23/10/2018
Date completed instructions received	25/10/2018

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	01/11/2018
Date of Issue	01/11/2018

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Results Approved By
Giovanni Agosti, Group Technical Manager
Jeremy Faircloth, Organics Supervisor
Long Pham, Team Leader, Metals
Steven Luong, Senior Chemist

Authorised By



Jacinta Hurst, Laboratory Manager

VOCs in soil		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
Date extracted	-	29/10/2018
Date analysed	-	31/10/2018
Dichlorodifluoromethane	mg/kg	<1
Chloromethane	mg/kg	<1
Vinyl Chloride	mg/kg	<1
Bromomethane	mg/kg	<1
Chloroethane	mg/kg	<1
Trichlorofluoromethane	mg/kg	<1
1,1-Dichloroethene	mg/kg	<1
trans-1,2-dichloroethene	mg/kg	<1
1,1-dichloroethane	mg/kg	<1
cis-1,2-dichloroethene	mg/kg	<1
bromochloromethane	mg/kg	<1
chloroform	mg/kg	<1
2,2-dichloropropane	mg/kg	<1
1,2-dichloroethane	mg/kg	<1
1,1,1-trichloroethane	mg/kg	<1
1,1-dichloropropene	mg/kg	<1
Cyclohexane	mg/kg	<1
carbon tetrachloride	mg/kg	<1
Benzene	mg/kg	<0.2
dibromomethane	mg/kg	<1
1,2-dichloropropane	mg/kg	<1
trichloroethene	mg/kg	<1
bromodichloromethane	mg/kg	<1
trans-1,3-dichloropropene	mg/kg	<1
cis-1,3-dichloropropene	mg/kg	<1
1,1,2-trichloroethane	mg/kg	<1
Toluene	mg/kg	<0.5
1,3-dichloropropane	mg/kg	<1
dibromochloromethane	mg/kg	<1
1,2-dibromoethane	mg/kg	<1
tetrachloroethene	mg/kg	<1
1,1,1,2-tetrachloroethane	mg/kg	<1
chlorobenzene	mg/kg	<1
Ethylbenzene	mg/kg	<1
bromoform	mg/kg	<1

VOCs in soil		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
m+p-xylene	mg/kg	<2
styrene	mg/kg	<1
1,1,2,2-tetrachloroethane	mg/kg	<1
o-Xylene	mg/kg	<1
1,2,3-trichloropropane	mg/kg	<1
isopropylbenzene	mg/kg	<1
bromobenzene	mg/kg	<1
n-propyl benzene	mg/kg	<1
2-chlorotoluene	mg/kg	<1
4-chlorotoluene	mg/kg	<1
1,3,5-trimethyl benzene	mg/kg	<1
tert-butyl benzene	mg/kg	<1
1,2,4-trimethyl benzene	mg/kg	<1
1,3-dichlorobenzene	mg/kg	<1
sec-butyl benzene	mg/kg	<1
1,4-dichlorobenzene	mg/kg	<1
4-isopropyl toluene	mg/kg	<1
1,2-dichlorobenzene	mg/kg	<1
n-butyl benzene	mg/kg	<1
1,2-dibromo-3-chloropropane	mg/kg	<1
1,2,4-trichlorobenzene	mg/kg	<1
hexachlorobutadiene	mg/kg	<1
1,2,3-trichlorobenzene	mg/kg	<1
Surrogate Dibromofluorometha	%	103
Surrogate aaa-Trifluorotoluene	%	93
Surrogate Toluene-d_8	%	95
Surrogate 4-Bromofluorobenzene	%	96

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
Date extracted	-	29/10/2018
Date analysed	-	31/10/2018
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	93

svTRH (C10-C40) in Soil		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
Date extracted	-	29/10/2018
Date analysed	-	30/10/2018
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	<100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	85

PAHs in Soil		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
Date extracted	-	29/10/2018
Date analysed	-	30/10/2018
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	0.1
Pyrene	mg/kg	0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	0.06
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	0.3
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5
Surrogate p-Terphenyl-d14	%	98

Organochlorine Pesticides in soil		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
Date extracted	-	29/10/2018
Date analysed	-	30/10/2018
HCB	mg/kg	<0.1
alpha-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Surrogate TCMX	%	108

Organophosphorus Pesticides		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
Date extracted	-	29/10/2018
Date analysed	-	30/10/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Chlorpyriphos	mg/kg	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Dichlorvos	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Ethion	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Parathion	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Surrogate TCMX	%	108

PCBs in Soil		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
Date extracted	-	29/10/2018
Date analysed	-	30/10/2018
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate TCLMX	%	108

Acid Extractable metals in soil		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
Date prepared	-	29/10/2018
Date analysed	-	29/10/2018
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.4
Chromium	mg/kg	7
Copper	mg/kg	5
Lead	mg/kg	19
Mercury	mg/kg	<0.1
Nickel	mg/kg	4
Zinc	mg/kg	21

Misc Soil - Inorg		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
Date prepared	-	29/10/2018
Date analysed	-	30/10/2018
Total Phenolics (as Phenol)	mg/kg	<5

Moisture		
Our Reference		203759-1
Your Reference	UNITS	QCB106
Date Sampled		20/10/2018
Type of sample		Soil
Date prepared	-	29/10/2018
Date analysed	-	30/10/2018
Moisture	%	6.6

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.

Method ID	Methodology Summary
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: VOCs in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	[NT]
Date extracted	-			29/10/2018	[NT]	[NT]	[NT]	[NT]	29/10/2018	[NT]
Date analysed	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
Dichlorodifluoromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Vinyl Chloride	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromomethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichlorofluoromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-Dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
trans-1,2-dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-dichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
cis-1,2-dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
bromochloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
chloroform	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
2,2-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
1,1,1-trichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	95	[NT]
1,1-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Cyclohexane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
carbon tetrachloride	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzene	mg/kg	0.2	Org-014	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
dibromomethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
trichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	73	[NT]
bromodichloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
trans-1,3-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
cis-1,3-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2-trichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Toluene	mg/kg	0.5	Org-014	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
dibromochloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
1,2-dibromoethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
tetrachloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	90	[NT]
1,1,1,2-tetrachloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
chlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
bromoform	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-014	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
styrene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
o-Xylene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

QUALITY CONTROL: VOCs in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	[NT]
1,2,3-trichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
isopropylbenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
bromobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-propyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-chlorotoluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-chlorotoluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3,5-trimethyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
tert-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trimethyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
sec-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,4-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-isopropyl toluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dibromo-3-chloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
hexachlorobutadiene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluorometha	%		Org-014	103	[NT]	[NT]	[NT]	[NT]	104	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-014	90	[NT]	[NT]	[NT]	[NT]	96	[NT]
Surrogate Toluene-d_8	%		Org-014	96	[NT]	[NT]	[NT]	[NT]	97	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-014	94	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	[NT]
Date extracted	-			29/10/2018	[NT]	[NT]	[NT]	[NT]	29/10/2018	[NT]
Date analysed	-			31/10/2018	[NT]	[NT]	[NT]	[NT]	31/10/2018	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	93	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	93	[NT]
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	[NT]	[NT]	92	[NT]
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	[NT]	[NT]	89	[NT]
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	[NT]	[NT]	94	[NT]
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	94	[NT]
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	90	[NT]	[NT]	[NT]	[NT]	96	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date extracted	-			29/10/2018	[NT]	[NT]	[NT]	[NT]	29/10/2018	[NT]
Date analysed	-			29/10/2018	[NT]	[NT]	[NT]	[NT]	29/10/2018	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	108	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	111	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	111	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	108	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	111	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	111	[NT]
Surrogate o-Terphenyl	%		Org-003	95	[NT]	[NT]	[NT]	[NT]	104	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date extracted	-			29/10/2018	[NT]	[NT]	[NT]	[NT]	29/10/2018	[NT]
Date analysed	-			30/10/2018	[NT]	[NT]	[NT]	[NT]	30/10/2018	[NT]
Naphthalene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Phenanthrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	[NT]	[NT]	[NT]	[NT]	112	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	105	[NT]	[NT]	[NT]	[NT]	93	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date extracted	-			29/10/2018	[NT]	[NT]	[NT]	[NT]	29/10/2018	[NT]
Date analysed	-			30/10/2018	[NT]	[NT]	[NT]	[NT]	30/10/2018	[NT]
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	76	[NT]
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	89	[NT]
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	83	[NT]
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	83	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	89	[NT]
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	84	[NT]
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	83	[NT]
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-005	99	[NT]	[NT]	[NT]	[NT]	113	[NT]

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date extracted	-			29/10/2018	[NT]	[NT]	[NT]	[NT]	29/10/2018	[NT]
Date analysed	-			30/10/2018	[NT]	[NT]	[NT]	[NT]	30/10/2018	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Dimethoate	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Fenitrothion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	113	[NT]
Malathion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	83	[NT]
Parathion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Ronnel	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate TCMX	%		Org-008	99	[NT]	[NT]	[NT]	[NT]	111	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date extracted	-			29/10/2018	[NT]	[NT]	[NT]	[NT]	29/10/2018	[NT]
Date analysed	-			30/10/2018	[NT]	[NT]	[NT]	[NT]	30/10/2018	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCLMX	%		Org-006	99	[NT]	[NT]	[NT]	[NT]	111	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date prepared	-			29/10/2018	[NT]	[NT]	[NT]	[NT]	29/10/2018	[NT]
Date analysed	-			29/10/2018	[NT]	[NT]	[NT]	[NT]	29/10/2018	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	118	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	110	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	114	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	119	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	114	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	119	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	116	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	111	[NT]

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date prepared	-			30/10/2018	[NT]	[NT]	[NT]	[NT]	30/10/2018	[NT]
Date analysed	-			30/10/2018	[NT]	[NT]	[NT]	[NT]	30/10/2018	[NT]
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	[NT]	[NT]	[NT]	[NT]	103	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

ATTACHMENT E

Important Information

The document ("Report") to which this page is attached and which this page forms a part of, has been issued by Golder Associates Pty Ltd ("Golder") subject to the important limitations and other qualifications set out below.

This Report constitutes or is part of services ("Services") provided by Golder to its client ("Client") under and subject to a contract between Golder and its Client ("Contract"). The contents of this page are not intended to and do not alter Golder's obligations (including any limits on those obligations) to its Client under the Contract.

This Report is provided for use solely by Golder's Client and persons acting on the Client's behalf, such as its professional advisers. Golder is responsible only to its Client for this Report. Golder has no responsibility to any other person who relies or makes decisions based upon this Report or who makes any other use of this Report. Golder accepts no responsibility for any loss or damage suffered by any person other than its Client as a result of any reliance upon any part of this Report, decisions made based upon this Report or any other use of it.

This Report has been prepared in the context of the circumstances and purposes referred to in, or derived from, the Contract and Golder accepts no responsibility for use of the Report, in whole or in part, in any other context or circumstance or for any other purpose.

The scope of Golder's Services and the period of time they relate to are determined by the Contract and are subject to restrictions and limitations set out in the Contract. If a service or other work is not expressly referred to in this Report, do not assume that it has been provided or performed. If a matter is not addressed in this Report, do not assume that any determination has been made by Golder in regards to it.

At any location relevant to the Services conditions may exist which were not detected by Golder, in particular due to the specific scope of the investigation Golder has been engaged to undertake. Conditions can only be verified at the exact location of any tests undertaken. Variations in conditions may occur between tested locations and there may be conditions which have not been revealed by the investigation and which have not therefore been taken into account in this Report.

Golder accepts no responsibility for and makes no representation as to the accuracy or completeness of the information provided to it by or on behalf of the Client or sourced from any third party. Golder has assumed that such information is correct unless otherwise stated and no responsibility is accepted by Golder for incomplete or inaccurate data supplied by its Client or any other person for whom Golder is not responsible. Golder has not taken account of matters that may have existed when the Report was prepared but which were only later disclosed to Golder.

Having regard to the matters referred to in the previous paragraphs on this page in particular, carrying out the Services has allowed Golder to form no more than an opinion as to the actual conditions at any relevant location. That opinion is necessarily constrained by the extent of the information collected by Golder or otherwise made available to Golder. Further, the passage of time may affect the accuracy, applicability or usefulness of the opinions, assessments or other information in this Report. This Report is based upon the information and other circumstances that existed and were known to Golder when the Services were performed and this Report was prepared. Golder has not considered the effect of any possible future developments including physical changes to any relevant location or changes to any laws or regulations relevant to such location.

Where permitted by the Contract, Golder may have retained subconsultants affiliated with Golder to provide some or all of the Services. However, it is Golder which remains solely responsible for the Services and there is no legal recourse against any of Golder's affiliated companies or the employees, officers or directors of any of them.

By date, or revision, the Report supersedes any prior report or other document issued by Golder dealing with any matter that is addressed in the Report.

Any uncertainty as to the extent to which this Report can be used or relied upon in any respect should be referred to Golder for clarification



SUEZ Recycling & Recovery Pty Ltd

Elizabeth Drive Waste Management Centre
1725 Elizabeth Drive
Kemps Creek NSW 2178

Phone: 1300 651 116
ABN: 70 002 902 650

Delivery Docket

Ticket No: ED310566465.0
Time In: 12/12/2018 12:32:16 PM
Time Out: 12/12/2018 12:53:19 PM
Vehicle Rego: BS15BN

701602 - RESOURCECO MATERIAL SOLUTIONS
Cust ref: I283

Contaminated Asbestos Soil - 8032

0.40t@
Source: External
Dest: Elizabeth Drive General Waste
GROSS 9.64t
TARE 9.24t
NET Weight: 0.40t

Chargeable Weight: 0.40t
Each Item Weight: 0.00t

Total (ex GST):
GST :

Total Price:

------ Payment Details----------

Temporary Acc:
==========
Total Price:
==========

Total Amount Tendered:
Change Given:

Operator: WODES

ıustralian Utilities Management Pty Ltd

ɜN 50 140 551 104

ɔb Docket No.: 49664

AUSTRALIAN UTILITIES MANAGEMENT

Suite 4, Level 1, 1C Grand Ave
Camellia NSW 2142
PO Box 9155
Harris Park NSW 2150
Accounts Mobile: 0474 200 489
Telephone: 02 9680 0738
Email: accounts@ausutilities.com.au

Date: 12/12/18.
Charged To: Golders
Cust. PO/T No. 9536.

Job Location: - Wellington St Waterloo
cope of Work: - disposal of waste drum.
Job Shift: Day
AUM Job No. 3395.

Personnel
Denis

Quantity	Description of Plant / Labour / Material	Total Hours
	Plant & Equipment	
1 x	Crane truck - BS 15 BN.	
	Labour	
	Material	
	Waste Disposal	
0.4t	x Contaminated Asbestos Soil. Suez dkt ED3105666465.	

Operating Hours	4
Travel Time	1
Total Hours	5.

hite Copy - Returned to AUM Office
nk Copy - Client

The customer shall observe and comply with all the statutory obligations, regulations and by-laws imposed by any Public Authority for the safety of persons and/or property and shall indemnify the owner and/operator for any liability caused by failure to so comply.

This is to certify that all work has been executed in a satisfactory manner and that any damage that may have occurred during this hire period is not the responsibility of Australian Utilities Management Pty Ltd.

Print Full Name: _____

Contact Detail: _____ Customer Signature: _____

APPENDIX L

Limitations

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Where permitted by the Contract, Golder may have retained subconsultants affiliated with Golder to provide some or all of the Services. However, it is Golder which remains solely responsible for the Services and there is no legal recourse against any of Golder's affiliated companies or the employees, officers or directors of any of them.

By date, or revision, the Report supersedes any prior report or other document issued by Golder dealing with any matter that is addressed in the Report.

Any uncertainty as to the extent to which this Report can be used or relied upon in any respect should be referred to Golder for clarification


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