Technical report G

Detailed site (Contamination) investigation

Douglas Partners
Geotechnics / Environment / Groundwater

Integrated Practical Solutions

Report on
Detailed Site (Contamination) Investigation

Proposed Redevelopment
339 Wallgrove Road
Eastern Creek

Prepared for
Cleanaway Operations Pty Ltd and Macquarie Corporate Holdings Pty Limited
c/- Arup Pty Ltd

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The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

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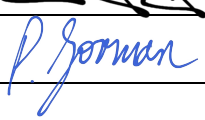
Reviewer		14 August 2020

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Executive Summary

This report presents the cumulative results from previous due diligence investigations conducted in 2015 and 2019 and further investigations conducted as part of a detailed site investigation for the site at 339 Wallgrove Road, Eastern Creek. The investigation comprised a desktop review of readily available site history information which indicated that the site has been in used a mix-use commercial/industrial area with various businesses including the use of the site for a large chicken egg factory farm in the 1970s. The neighbouring areas have remained vacant until the construction of the currently existing waste treatment facilities.

The 2015 and 2019 investigations combined comprised drilling of 40 boreholes, 7 of which were converted into combined soil gas and groundwater monitoring wells. With an additional 17 surface samples targeting locations near and within buildings and 6 surface water samples from standing water bodies at the site. Additional testing as a part of the detailed site investigation in 2020 comprised the drilling of 4 additional boreholes, which were converted into groundwater wells and the excavation of 15 test pits.

Overall the soil testing indicated no analytes above the adopted health-based investigation criteria with the exception of lead at one location and asbestos in soil largely within an elevated fill platform located in the south east of the site. It is noted however, that the majority of test locations were conducted using boreholes which are not the recommended method for assessing asbestos in soil, further reference should be given to the analysis presented within this report. The measured lead exceedance was considered to be associated with high levels of lead contained in paint samples from the nearby building, and from statistical analysis is not considered to be representative of soils across the site.

Exceedances of environmental based criteria were detected in soils for copper, zinc benzo(a)pyrene and TRH (C_{10}-C_{16}). Statistical analysis for the entire sample set resulted in upper confidence limits within the adopted environmental based criteria for copper, zinc and TRH (C_{10}-C_{16}). The benzo(a)pyrene exceedances were not considered significant when compared to higher reliability CRC CARE (2017) guidelines.

Groundwater and surface results indicated minor exceedances of the site assessment criteria for ammonia at two locations, and for chromium, nickel, manganese and zinc at a number of locations. These exceedances were considered to be indicative of regional groundwater quality rather than an on- or off-site contamination source. No detectable concentrations of TRH or VOC were observed.

Landfill gas monitoring results indicated zero to low gas flow rates produced from the monitoring wells in addition to low measured levels of landfill gases, corresponding to a characteristic gas situation of 1, requiring no further action currently. Soil vapour samples collected from the monitoring wells indicated minor detectable concentrations of BTEX, TPH, MAH, chlorinated hydrocarbons and solvents in all samples, below the site assessment criteria. Given the non-detection of these compounds in groundwater and the local groundwater flow direction, it is considered unlikely these concentrations are attributable to the nearby waste treatment facilities to the east and north. Further groundwater and soil vapour monitoring is recommended to provide further certainty for this conclusion and to account for potential variability due to local weather.

Based on the results presented within this report it is considered that the site has a low water and / or vapour contamination risk and a low to moderate risk for soil contamination, primarily in the form of asbestos in soil. It is considered that the site can be made suitable for the proposed development, subject to addressing the risk management actions outlined within this report, including the development of an updated hazardous building materials survey, the removal of all hazardous building materials, continued soil and soil gas monitoring and the development and implementation of a remediation action plan.

Table of Contents

Page

Executive Summary 3

1. Introduction 1

2. Scope of Works 2

2.1 Desktop and Preliminaries 2

2.2 Fieldwork and Analysis in 2015 2

2.3 Fieldwork and Analysis in 2019 3

2.3.1 Groundwater / Soil Gas 3

2.3.2 Fill Targets 6

2.3.3 Surface Samples 6

2.3.4 Surface Water 7

2.4 Fieldwork and Analysis (Current 2020 Investigation) 8

2.4.1 Groundwater / Soil Gas 8

2.4.2 Surface Water 10

2.4.3 Additional Fill Targeting 10

3. Site Information 11

3.1 Environmental Setting 12

4. Site History Review 13

4.1 Aerial Photograph Review 13

4.2 Section 10.7 Planning Certificate 14

4.3 NSW EPA Records 14

4.4 SafeWork NSW Records 15

4.5 Hazardous Building Materials 15

5. Site Walkover 16

5.1 Observations in 2015 16

5.2 Observations in 2019 17

5.3 Observations in 2020 18

6. Preliminary Conceptual Site Model 18

6.1 Potential Sources 19

6.2 Potential Receptors 19

6.3 Potential Pathways 20

6.4 Summary of Preliminary CSM 20

7. Fieldwork and Analysis 22

7.1 Soil Sampling and Monitoring Well Locations and Rationale 22

7.2 Drilling and Excavation Methods 22

7.3 Groundwater Wells 23
7.4 Soil Sampling Procedures 23
7.5 On-Site Asbestos Screening 24
7.6 Soil Gas Sampling 24
7.7 Groundwater Sampling 25
7.8 Surface Water Sampling 25
7.9 Analytical Rationale 25
8. Site Assessment Criteria 26
8.1 Soils 26
8.1.1 Health Investigation and Screening Levels 26
8.1.2 Ecological Investigation Levels 29
8.1.3 Ecological Screening Levels - Petroleum Hydrocarbons 30
8.1.4 Management Limits - Petroleum Hydrocarbons 31
8.1.5 Asbestos in Soil 32
8.2 Groundwater / Surface Water 33
8.2.1 Groundwater and Surface Water Investigation Levels 33
8.2.2 Health Screening Levels - Petroleum Hydrocarbons 34
8.3 Methane Gas 35
8.4 Soil Vapour 36
9. Field Work Observations 37
9.1 Asbestos in Soil 37
9.2 Groundwater Levels 38
9.3 Landfill Gas Monitoring 39
10. Analytical Results Summary 42
11. Analysis Results 42
11.1 2020 Investigation 42
11.1.1 Soil Samples 42
11.1.2 Groundwater and Surface Water 44
11.1.3 Soil Vapour 44
11.2 2019 Investigation 44
11.2.1 Soil Samples 44
11.2.2 Groundwater and Surface Water 45
11.2.3 Soil Vapour 45
11.3 2015 Investigation 46
11.3.1 Surface Soils 46
11.3.2 Material Sample 46
11.3.3 Soils (boreholes) and Dam Sediment 47
11.3.4 Dam Water and Groundwater 47
11.3.5 Methane Gas 47

11.4 Summary Soil Exceedances 48
11.5 Preliminary Waste Classification 48
11.5.1 Fill 48
11.5.2 Preliminary VENM Assessment 50
12. Discussion 51
12.1 Identified Contamination 51
12.2 Updated Conceptual Site Model 52
12.3 Soil Management 53
13. Conclusions and Recommendations 54
14. Limitations 55

Appendices

Appendix A: About This Report and Drawings
Appendix B: Site Photographs
Appendix C: Site History Documentation
Appendix D: Quality Assurance and Quality Control Procedures
Calibration Certificates
Appendix E: Descriptive Notes, Borehole Logs
Appendix F Field Sheets
Appendix G: Summary Laboratory Results Tables and Statistical Analysis
Appendix H: Laboratory Certificates and Chain of Custody

Report on Detailed Site (Contamination) Investigation
Proposed Redevelopment
339 Wallgrove Road, Eastern Creek

1. Introduction

This report presents the results of a Detailed Site (Contamination) Investigation (DSI) undertaken by Douglas Partners Pty Ltd (DP) for the site at 339 Wallgrove Road, Eastern Creek (the site) as shown on Drawing 1, Appendix A. The work was commissioned by Arup Pty Ltd, under instruction from Cleanaway Operations Pty Ltd and Macquarie Corporate Holdings Pty Limited (the client) and was carried out in general accordance with DP's proposal SYD190923.P.001.Rev1 dated 10 September 2019, and subsequent proposal SYD190923.P.002.Rev5 dated 19 December 2019.

The site located at 339 Wallgrove Road in Eastern Creek and covers an area of approximately 8.67 ha and is proposed to be developed into the Western Sydney Energy and Resource Recovery Centre (WSERRC) with usage as an energy from waste facility. The site is currently occupied by a number of large poultry coops / sheds and ancillary buildings, large areas of grass cover, and a dam at the eastern boundary.

DP previously conducted a due diligence investigation (for another client) at the site in 2015. The investigation was focussed on a proposed bulky goods warehouse type of development, and the investigation targeted potential areas and sources of environmental concern based on a developed conceptual site model. The investigation comprised limited soil, groundwater and soil gas sampling and testing.

A due diligence investigation was conducted by DP for the client in November 2019 to investigate the existence of known or potential contamination sources, and to assess the risk posed by those sources for the current proposed development, through a source-pathway-receptor conceptual site model (CSM). The results of the 2019 investigation (which incorporated results from 2015) were used to inform the need for additional investigations (for delineation, guideline compliance and data gap addressing) implemented as part of an Environmental Impact Study (EIS). The results were reported by DP in *Report on Due Diligence Environmental (Contamination) Investigation, Proposed Redevelopment, 339 Wallgrove Road, Eastern Creek NSW* (Report Reference 84822.02.R.001.Rev1) dated 23August 2020 (DP, 2020).

This DSI report amalgamates the results from the 2015, 2019 and the current investigations, to assess the suitability of the site, from a contamination perspective, for the proposed development. The investigation results will be utilised to inform a remediation action plan that, once implemented and validated, will render the site suitable for the proposed development. This report has also been prepared to support an EIS for the proposed development.

2. Scope of Works

2.1 Desktop and Preliminaries

The desktop component of DSI comprised the following:

- Review of historical and recent aerial photographs to view changes to the site and surrounding lands;
- Review of site information, including:
  - Published maps of Acid Sulfate Soil (ASS) potential;
  - Geological and topographical maps / drawings; and
  - Groundwater bores registered with WaterNSW (formerly Department of Water and Energy).
- A review of the NSW EPA records of Notices and Licenses in relation to the site and surrounding properties;
- A review of Section 10.7 (formerly Section 149) Certificate(s);
- A review of SafeWork NSW records for the storage of hazardous chemicals at the site; and
- A review of previous investigations undertaken by DP for the site and surrounding properties.

Prior to undertaking any fieldwork component of the investigation, the following preliminaries were undertaken by DP:

- Preparation of appropriate SWMS and briefing of all field staff; and
- Obtain DBYD drawings and undertake on site screening for underground services in the areas of proposed works.

2.2 Fieldwork and Analysis in 2015

Fieldwork by DP in 2015 comprised the following:

- Drilling of 20 bores (BH1 to BH20, as shown on Drawings 2A and 2B, Appendix A). Ten bores were extended to a minimum of 1 m into natural soil and the remainder were extended to approximately 1 m into the shale bedrock. Three bores (BH2, BH4, BH20) were converted into soil gas and groundwater monitoring wells, two of which extended to 10 m below ground level (bgl);
- Collection of soil samples from the 20 bores for both environmental and geotechnical purposes including from standard penetration tests (SPT) at regular depth intervals;
- At BH2, BH4 and BH20, PVC groundwater wells were installed into each of the bores, with the screened section extending from the base of the bore to the underside of the fill at that location. The screened section was designed to pick up both potentially fluctuating groundwater and soil gas above the saturated zone. The wells were completed with a gravel pack around the screened section, and a bentonite seal above the screened section to the ground surface. The wells protrude above ground level and are capped with a self-sealing vapour sampling cap. Metal monuments with lockable lids were installed around the wells;
- Each of the wells were developed by pumping dry or a minimum of three well volumes;

- Gas and groundwater were sampled from the wells within four days of installation and development. The air component of the well was purged initially (one well volume). Field readings of general gases were measured for a period of up to 5 minutes using a GA5000 meter, and methane, oxygen, carbon dioxide, carbon monoxide and hydrogen sulphide levels were recorded;
- Collection of 17 surface soil samples (S1 to S17, as shown on Drawings 2A and 2B, Appendix A) located adjacent to the existing site sheds;
- Screening of all soil samples for volatile organic compounds (VOC) using a photo-ionisation detection (PID) instrument;
- Development of the three groundwater wells followed by collection of groundwater samples using low flow techniques;
- Collection of one water sample and one sediment sample from the existing dam;
- Measurement of methane gas in the three monitoring wells;
- Analysis by a NATA accredited laboratory of 35 selected soil samples, 17 surface soil samples and one dam sediment sample for a combination of the following contaminants of concern:
  - Metals (arsenic, cadmium, copper, chromium, lead, mercury, nickel and zinc);
  - Total recoverable hydrocarbons (TRH);
  - Benzene, toluene, ethylbenzene and xylene (BTEX);
  - Polycyclic aromatic hydrocarbons (PAH);
  - Phenols;
  - Organochlorine pesticides (OCP);
  - Organophosphorus pesticides (OPP);
  - Polychlorinated biphenyls (PCB);
  - Volatile organic compounds (VOC); and
  - Asbestos.
- Analysis of a total of six soil samples for cation exchange capacity (CEC) and pH for calculation of site specific ecological investigation levels;
- Analysis of three groundwater samples and one dam water sample for analysis of metals, TRH, BTEX, PAH (low level), phenols, OCP, OPP, PCB, VOC and hardness; and
- Collection / preparation and analysis of industry standard QA / QC samples.

2.3 Fieldwork and Analysis in 2019

2.3.1 Groundwater / Soil Gas

The previous investigations by DP at the site (2015) identified a soil profile of clays overlying shale bedrock which is conducive to limited groundwater and soil gas movement. The groundwater and soil gas test results for samples from three combined groundwater and soil gas wells (in 2015) installed at the site revealed negligible concentrations of the targeted analytes.

Groundwater level measurements made previously at the site, and the natural topography of the site and environs indicated that the groundwater is likely to flow in a north-easterly direction across the site. As such, groundwater impacts from the adjoining and nearby waste recycling facilities to the north and east were considered unlikely to be measured within the site.

In order to assess potential on-site impacts from off-site potential sources, albeit generally low risk, the groundwater and soil gas investigation comprised the following:

- Drilling of an additional four boreholes (BH201, 204, 208, 213) for groundwater / soil gas well installation at the locations shown on the Drawings 2A and 2B, Appendix A. The locations targeted:
  - Two locations on the eastern boundary (supplementing existing wells BH2 and BH4) as a means of assessing potential migration from the adjoining waste recycling facility;
  - One location on the northern boundary (noting that the location on the north east corner services both the northern and eastern boundary) as a means of assessing potential migration from the adjoining waste recycling facility and landfill operations further north; and
  - One location close to an area of soil drum storage within the site.
- The wells were installed to depths ranging from 4.5 m to 10 m bgl to be consistent with previous installations and to enable adequate screening across the anticipated groundwater fluctuation zone;
- Collection of soil samples from each of the test bores at regular intervals, changes in strata and where signs of contamination were observed;
- All fill samples were screened for VOC using a PID instrument;
- PVC groundwater wells were installed into each of the bores, with the screened section extending from the base of the bore to the underside of the fill at that location. The screened section was designed to pick up both potentially fluctuating groundwater and soil gas above the saturated zone. The wells were completed with a gravel pack around the screened section, and a bentonite seal above the screened section to the ground surface. The wells protrude above ground level and are capped with a self-sealing vapour sampling cap. Metal monuments with lockable lids were installed around the wells;
- Each of the new monitoring wells, and two of the existing wells (BH2 and BH4) were to be developed by pumping dry or a minimum of three well volumes. Note that the previously installed well (BH20) could not be located at the time;
- Gas and groundwater were sampled from the wells within 1-4 days of installation and development. The air component of the well was purged initially (one well volume). Field readings of general gases were measured for a period of up to 5 minutes using a GA5000 meter, and methane, oxygen, carbon dioxide, carbon monoxide and hydrogen sulphide levels were recorded. Air samples were collected directly by connecting a sampling tube directly to 1L Summa Canister with a flow regulator set by the analytical laboratory (at approximately 0.1 L/min). The regulators were supplied by the analytical laboratory and decontaminated by the laboratory prior to shipment;
- Back-up samples were collected directly into solid carbon tubes using an SKC constant flow air-sampling pump, low flow adapter and rotameter to confirm the flowrate (0.1 L/min);

- Groundwater samples were collected using a peristaltic pump (low-flow technique) with adjustable flow rate, with disposable polyethylene tubing. Groundwater samples obtained for metal analysis were filtered in the field;
- Soil gas samples were analysed at Envirolab Services (ELS) for VOC which will be performed according to TO15 USEPA *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air Second Edition. Determination Of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters And Analyzed By Gas Chromatography/Mass Spectrometry* (GC/MS); and total recoverable hydrocarbons (TRH), F1 and F2 fractions were determined by measurement of air-phase petroleum hydrocarbons and ozone precursors by GC/MS;
- Groundwater samples were analysed by the primary laboratory for:
  - Metals (arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, vanadium, zinc);
  - TTRH;
  - BTEX;
  - PAH;
  - Total phenols;
  - OCP / OPP;
  - PCB;
  - VOC;
  - Cyanide;
  - Ammonia;
  - Anions (Cl, SO4, NO2, NO3, PO4); and
  - Hardness.
- Selected soil samples were analysed for a combination of the following potential contaminants:
  - Eight priority metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc);
  - TRH / BTEX;
  - PAH;
  - Total phenols;
  - OCP / OPP / PCB;
  - Asbestos (40 g sample for initial screening purposes); and
  - pH and CEC analysis.
- Industry standard QA / QC (soil and water) including 5% intra-laboratory replicates, 5% inter-laboratory replicates, trip spike, and trip blank samples were included with the sample batches, as appropriate.

2.3.2 Fill Targets

The previous investigations by DP at the site (2015) identified a number of fill areas within the site, which were targeted for sampling at the time. The site walkover prior to the 2019 sampling identified some additional filled areas around the site, most notably in the northern portion (north of the easement). The source of the fill on site is not known. The bore numbers adopted provided for a reasonable assessment of the "general" fill quality in the site.

The scope of works was as follows:

- Drilling an additional nine boreholes (BH202, 203, 205, 206, 207, 209, 210, 211, and 212) at the locations shown on Drawings 2A and 2B, Appendix A;
- The boreholes were drilled using a truck mounted drilling rig or similar to depths of at least 1 m into natural soil (or prior auger refusal). Some of the bores were augered by hand due to access difficulties and weather conditions;
- Collect soil samples by an environmental engineer / scientist from each of the test bores at the surface and at regular intervals in fill, changes in strata and where signs of contamination are observed;
- All fill samples were screened for VOC using a PID;
- Submit selected soil samples to the primary laboratory for analysis of a combination of the following potential contaminants:
  - Eight priority metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc);
  - TRH / BTEX;
  - PAH;
  - Total phenols;
  - OCP / OPP / PCB;
  - Toxicity Characteristic Leaching Procedure (TCLP); and
  - pH and CEC analysis.
- Industry standard QA / QC including 5% intra-laboratory replicates, 5% inter-laboratory replicates, trip spike, and trip blank samples were included with the sample batches, as appropriate.

Note that whilst test pit sampling would be the preferred sampling method for fill (i.e., it allows for a visual assessment of composition, particularly the potential for asbestos), this method was not adopted due to the increased ground disturbance created. Furthermore, the assessment of asbestos in boreholes is limited due to the available soil volumes recovered. Where possible, an assessment of AF / FA% (in accordance with the national guidelines) was proposed. However, the samples able to be recovered were not sufficient and therefore only a positive or negative result on jar samples was undertaken.

2.3.3 Surface Samples

The previous investigations by DP at the site (2015) excluded sampling within the footprints of existing buildings, as they remained active at the time. A hazardous building materials assessment at the time identified the presence of asbestos in much of the buildings on site, and asbestos (as well as zinc and lead) was found to be present in surface soils along the peripheries of some of the buildings.

Within the poultry shed there is the potential for surface soils to be contaminated with asbestos and metals (associated with the building materials) and pesticides, if pest treatment was undertaken. There is also a potential for surficial soil impacts in areas of oil drum storage, machinery use, and storage of metal items, although it is noted that most of the buildings ancillary to the poultry sheds had concrete floors.

The investigation was designed to get an indication of the presence of contaminants in surface soils in the building footprints through a limited number of samples (sampled by hand) as shown on Drawings 2A and 2B, Appendix A.

The scope of works was as follows:

- Drilling an additional 11 boreholes by hand (BH214 to BH225, except BH217). The samples were taken from the depth interval of 0-0.15 m;
- Drilling an additional single bore (BH217) adjacent to an observed small incinerator;
- All fill samples were screened for VOC using a PID;
- Submit selected soil samples to the primary laboratory for analysis of a combination of the following potential contaminants, with the analysis determined by the position of the bore, the likely contaminants identified at that location, and the observations made in the field:
  - Eight priority metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc);
  - TRH / BTEX;
  - PAH;
  - OCP / OPP;
  - TCLP; and
  - pH and CEC analysis.
- Industry standard QA / QC including 5% intra-laboratory replicates, 5% inter-laboratory replicates, trip spike, and trip blank samples were included with the sample batches, as appropriate.

Again, the samples able to be recovered were not sufficient to enable assessment of AF / FA% and therefore only a positive or negative result for asbestos on jar samples was undertaken.

2.3.4 Surface Water

The previous investigations (2015) and the recent site walkover identified the following surface water features within the site:

- The existing dam close to the eastern boundary;
- A shallow “wet” area in the lowest point in the site, near the north-east boundary;
- A pit collecting runoff from the adjoining property to the east, located near BH2; and
- A pit beneath the building / slab near previous sample location S6. This appeared to be a sump connected to a pump feeding water to other buildings within the site.

The surface water bodies are generally in low lying areas of the site, and therefore collect surface water runoff from small localised catchments. The runoff may be collecting contaminants from various surficial sources within the site and off-site.

The scope of works is as follows:

- Directly fill sample bottles with water from each of the features mentioned above, with three from the existing dam, for a total of six surface water samples (SW1 to SW6);
- Water samples were analysed by the primary laboratory for:
  - Metals (arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, vanadium, zinc);
  - TRH / BTEX;
  - PAH;
  - OCP / OPP / PCB;
  - Total phenols;
  - VOC;
  - Cyanide;
  - Ammonia; and
  - Anions (Cl, SO4, NO2, NO3, PO4).
- Industry standard QA / QC including 5% intra-laboratory replicates, 5% inter-laboratory replicates, trip spike, and trip blank samples were included with the sample batches, as appropriate.

2.4 Fieldwork and Analysis (Current 2020 Investigation)

2.4.1 Groundwater / Soil Gas

In order to assess potential on-site impacts from off-site potential sources, albeit generally of low risk as indicated by the 2015 and 2019 results, the groundwater and soil gas investigation comprised the following:

- Drilling an additional four (4) boreholes (ABH01, ABH02 and ABH03 and ABH08) for groundwater well installation at the locations shown on the Drawings 2A and 2B, Appendix A. The locations were primarily selected for a geotechnical investigation conducted in conjunction with the current investigation. The locations were selected as follows:
  - Two locations towards the eastern boundary (supplementing existing wells BH2, BH4, BH204 and BH213);
  - One location towards the western boundary of the site; and
  - One location within an elevated fill platform towards the southern boundary of the site.
- The wells were installed to depths ranging from 4.0 m to 15 m bgl to be consistent with previous installations and to enable adequate screening across the anticipated groundwater fluctuation zone;
- PVC groundwater wells were installed into each of the bores, with the screened section extending from the base of the bore to the underside of the fill at that location. The screened section was designed to pick up potentially fluctuating groundwater. The wells were completed with a gravel pack around the screened section, and a bentonite seal above the screened section to the ground surface. Wells were completed either extended above ground with a metal monument, or with a gatic cover flush with the ground level;

- Field readings of general gas were measured for select wells (BH2, BH4, BH201, BH204, BH208 and BH213) prior to well development for a period of up to 10 minutes using a GA5000 meter and methane, oxygen, carbon dioxide, carbon monoxide and hydrogen sulphide levels were recorded. It is noted that again the BH20 well could not be located;
- Each of the new monitoring wells (ABH01, ABH02 and ABH03 and ABH08), and the existing wells (BH2, BH4, BH201, BH204, BH208 and BH213) were developed by pumping dry or a minimum of three well volumes;
- Gas and groundwater sampling from the installed wells across two monitoring events. The air component of the well was purged initially (one well volume). Field readings of general gases were measured for a period of up to 10 minutes using a GA5000 meter, and methane, oxygen, carbon dioxide, carbon monoxide and hydrogen sulphide levels were recorded. Air samples were collected directly by connecting a sampling tube directly to 1 L Summa Canister with a flow regulator set by the analytical laboratory (at approximately 0.1 L/min). The regulators were supplied by the analytical laboratory and decontaminated by the laboratory prior to shipment;
- Back-up samples were collected directly into solid carbon tubes using an SKC constant flow air-sampling pump, low flow adapter and rotameter to confirm the flowrate (0.1 L/min);
- Groundwater samples were collected using a peristaltic pump (low-flow technique) with adjustable flow rate, with disposable polyethylene tubing. Groundwater samples obtained for metal analysis were filtered in the field. Note that a groundwater sample from ABH08 was not taken during the February 2020 monitoring round due to delays in installation, however, the well was sampled during the following monitoring round;
- Soil gas samples were analysed at Envirolab Services (ELS) for VOC according to TO15, landfill gases (CH_4, CO_2, CO, O_2 and H_2S), and TRH;
- Groundwater samples were analysed by the primary laboratory for:
  - Metals (arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, vanadium, zinc);
  - TRH;
  - BTEX;
  - PAH;
  - Total phenols;
  - OCP / OPP;
  - PCB;
  - VOC;
  - Cyanide;
  - Inorganics (sulfate, ammonia and chloride); and
  - Total alkalinity.
- Industry standard QA / QC (water and gas) including 5% intra-laboratory replicates, 5% inter-laboratory replicates, trip spike, and trip blank samples were included with the sample batches, as appropriate.

2.4.2 Surface Water

The current investigation comprised additional sampling of the surface water bodies previously identified and sampled as a part of the 2019 investigation (SW01 to SW06, as shown on Drawings 2A and 2B, Appendix A) across two sampling events. Note that a walkover was conducted across the site prior to sampling to identify any other surface water migration into the site, no other surface water flow paths were identified, and therefore, no other surface water samples could be taken.

The scope of works was as follows:

- Directly fill sample bottles with water from each of the features mentioned above, with three from the existing dam, for a total of six surface water samples;
- Water samples were analysed by the primary laboratory for:
  - Metals (arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, lead, manganese, mercury, molybdenum, nickel, selenium, vanadium, zinc);
  - TRH / BTEX;
  - PAH;
  - OCP / OPP / PCB;
  - Total phenols;
  - VOC;
  - Inorganics (sulfate, ammonia, chloride, total nitrogen and total phosphorous); and
  - General parameters (pH, dissolved oxygen and electrical conductivity);

Industry standard QA / QC including 5% intra-laboratory replicates, 5% inter-laboratory replicates, trip spike, and trip blank samples were included with the sample batches, as appropriate.

2.4.3 Additional Fill Targeting

Based on the observations and results of the previous 2015 and 2019 investigations, an elevated fill platform was identified in the southern portion of the site which presented a contamination risk from uncontrolled filling. Additional data gaps were identified in the northern portion of the site, and in lower lying areas surrounding the elevated fill platform. It was also noted that previous intrusive testing was limited to boreholes and surface sampling, with test pitting recommended to provide higher resolution of results for potential contamination, in particular, asbestos.

The scope of works was as follows:

- Excavated 15 test pits at the locations shown on Drawing 2A and 2B, Appendix A, including nine locations within the elevated fill platform. The test locations are identified as TP01 to TP015 (interchangeably referred to as ATP01 to ATP15 respectively);
- The test pits were excavated using a 8 tonne excavator to depths of at least 0.5 m into natural soil (or limit of excavation), being depths ranging from 0.8 m to 4.5 m bgl;
- Collect soil samples by an environmental engineer/scientist from each of the test pits at the surface and at regular intervals in fill, changes in strata and where signs of contamination are observed;
- All fill samples were screened for VOC using a PID;

- In accordance with the WA Department of Health *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (DoH, 2009), collection of additional 10 L bulk samples at 1 m intervals, or changes in strata, for on-site screening through a 7 mm screen for potential asbestos containing materials. Bulk samples and any recovered potential asbestos containing materials were weighed on-site to calculate approximate asbestos in soil concentrations. The on-site screening results were used to select duplicate 500 mL soil samples and representative material samples to submit for additional analysis at the analytical laboratory;
- Submit selected soil and material samples to the primary laboratory for analysis of a combination of the following potential contaminants:
  - Eight priority metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc);
  - TRH / BTEX;
  - PAH;
  - Total phenols;
  - OCP / OPP / PCB;
  - TCLP;
  - Asbestos fines and fibrous asbestos (AF and FA);
  - Asbestos identification (material samples); and
  - pH and CEC analysis.
- Industry standard QA / QC including 5% intra-laboratory replicates, 5% inter-laboratory replicates, trip spike, and trip blank samples were included with the sample batches, as appropriate.

3. Site Information

The site information is presented in Table 1 below.

Table 1: Site Information

Item	Details
Site Address	339 Wallgrove Road, Eastern Creek
Legal Description	Lot 1, DP 1059698.
Local Government	Blacktown City Council
Zoning	SP2 Special Purpose
Site Area	8.67 hectares (approximately)

The nearest residential area is around 1 km to the south of the site in Horsley Park with the Minchinbury residential area located around 3 km to the north-west. Horsley Park Public School is over 2 km south of the site and a childcare centre is within the Eastern Creek industrial area about 1 km to the west of the site.

The site is bounded by the Westlink M7 Motorway to the west with the Eastern Creek industrial area located farther west. The SUEZ Eastern Creek Waste Management Centre, comprising the now-closed landfill site and operational organics recycling facility is located to the north and north-east, with the operational Global Renewables waste management facility located immediately to the east. To the south, the site is bounded by the Warragamba Pipeline Corridor with the Austral Bricks facility located farther south**.**

The site locality is shown in Drawing 1, Appendix A. Site photographs showing the general condition of the site and test locations are attached in Appendix B.

3.1 Environmental Setting

Geological mapping indicates the site is underlain by Bringelly Shale comprising shale, carbonaceous claystone, claystone, laminite, fine to medium-grained lithic sandstone, rare coal and tuff. Residual Blacktown soils are also mapped for the site and comprise yellow, red and brown podzolic soils limited by low soil fertility and poor soil drainage.

Current subsoil investigations support the mapped units with filling typically underlain by clays and shale at the site.

A review of the NSW Acid Sulfate Soil Risk Map indicates that the site is not located in an area of potential acid sulphate soils (ASS).

The site slopes from a high point at the south west boundary of approximately RL 61 to the north of the site between RL 51 and RL 52. A steep embankment separates higher ground at the western hardstand areas and lower ground covered by the eastern grassed areas of the site and dam at the east.

A dam is located centrally along eastern boundary of the site. A tributary of the Reedy Creek is located to the north and west and a tributary of the Eastern Creek is located to the east of the site and the Prospect Reservoir is located to the east of the site. Surface drainage at the site is expected to flow toward the dam at the eastern boundary and it is understood that stormwater down pipes for sheds located at the north of the site drain out to the grassed areas at the north of the site and it is expected that surface water flow across the grassed areas is dominated by an easterly direction toward the dam, expected to be the main water receptor. It was noted that stormwater pipes along the eastern boundary from the SITA Eastern Creek Resource Recovery Park flowed into the site, to the north of the dam onsite. This then drained in a northerly direction, following the eastern boundary of the site.

Groundwater level analysis in the previous investigation (2015) and the preliminary results from the 2019 investigation indicates that the groundwater is likely to flow in a north-easterly direction across the site, although shallow depths to groundwater at the eastern boundary of the site are likely to be associated with the dam.

A search of the NSW Department of Industries Groundwater Bore Database revealed that there are four monitoring bores located up to 1.3 km the south east along the water pipeline running towards Prospect Reservoir. An additional 3 monitoring bores were located 1.5 km to west. Based upon the inferred groundwater flow direction these identified bores are not considered relevant to characterise the groundwater conditions across the site. No residential or recreational use bores were identified in the search.

Site features observed at the time of the investigation are described in detail in Section 5.

4. Site History Review

4.1 Aerial Photograph Review

Historical aerial photographs were obtained from databases held by the NSW Land & Property Information Division and Nearmap, in order to assess changes to site and adjoining property conditions over time. Extracts of the photographs are provided in Appendix B.

Coverage of the site prior to 1951 was not available for review, however in 1951, the site is shown as vacant of any buildings with sparse vegetation cover and a small dam in the south east corner. Construction of what appears to be the present day water pipeline to the south of the site is partially completed. The surrounding region is of similar appearance reflective of rural land uses.

Building in site has commenced by 1961 with a medium sized warehouse / shed and ancillary sheds located at the southern portion of the site. Substantial clearing of the site has commenced with little vegetation cover remaining on site. Construction of the water pipeline to the south of the site is now complete. A dam is located in the central area of the eastern boundary and appears to be the current dam on site.

In 1970, construction of the large current chicken coups has commenced. An expansion of the prior warehouse / shed and ancillary sheds has been completed with the four previous warehouses being expanded into ten separate buildings. An adjacent paved area with an identified feature can be seen to the west of the site, however, this feature is removed with the widening of Westlink M7 west of the site in the early 2000s.

An additional large size building is present to the west of the three storage sheds in the northern elevation of the building complex in the 1986 aerial photograph.

The demountable house that still remain onsite is first present in the 2009 aerial photograph. Primary site features (buildings and dam) in the 2009 photograph are similar to the current day features, although small volume stockpiles can be seen at different locations beside buildings from photographs available over time. In addition, stockpiling of scrap plastics contained within large white and blue bulk bags appears to have commenced in 2013. The waste recycling / treatment facility to the east of the site (Global Renewables) first appears as a completed facility in the 2009 aerial photograph. The Suez Resource Recovery Park to the north and north-east of the site is likely to have been operating before that time.

A brief review of readily available Nearmap images highlight a number of changes following the 2009 aerial. The present-day vacant area to the east of the southern chicken coup was cleared of vegetation in the 2013 aerial photograph. This area appeared to have begun to be used as a truck storage area in 2014. Wrecked cars are present in the 2015 aerial photograph in the truck storage area. Large trucks and buses are present in the 2016 photograph. Minor earthworks are present in the northern area of the site in the April 2019 image, with the 'aggregate pad' / truck turning area being completed by July 2019.

Apart from the time lapse changes to stockpile orientations, the general layout of the waste treatment and recycling facilities to the north and east of the site has not changed significant between 2009 and 2019.

4.2 Section 10.7 Planning Certificate

A review of the Section 10.7 Planning Certificate (see Appendix C) dated 3 February 2020 indicated the following:

- The land is unzoned;
- The site is not declared to be significantly contaminated within the meaning of the Contaminated Land Management (CLM) Act;
- The site is not subject to a management order or an on-going maintenance order within the meaning of the CLM Act;
- The site is not the subject of an approved voluntary management proposal within the meaning of the CLM Act; and
- The site is not the subject of a site audit statement within the meaning of the CLM Act.

It is noted that residential homes within the Blacktown Local Government Area may contain loose fill asbestos insulation. However, given the identified previous and current land uses this is not considered relevant with the exception of the demountable house.

4.3 NSW EPA Records

The NSW EPA also issues environmental protection licenses under Section 308 of the *Protection of the Environment Operations Act* 1997 (POEO Act). The register contains:

- Environmental protection licenses;
- Applications for new licenses and to transfer or vary existing licenses;
- Environment protection and noise control licenses;
- Convictions in prosecutions under the POEO Act;
- The result of civil proceedings;
- License review information;
- Exemptions from provisions of the POEO Act or Regulations;

- Approvals granted under Clause 9 of the POEO (Control of Burning) Regulation; and
- Approvals granted under Clause 7a of the POEO (Clean Air) Regulation.

A search of the public register undertaken in the indicated that there are two current Environment Protection Licence issued to sites within 1 km search buffer. These are to Eastern Creek Operations Pty Limited, which is to the immediate east of the site, for 'recovery of general waste, non-thermal treatment of general waste, waste storage - other types of waste and composting'. The EDL LFG (NSW) Pty Ltd, EDL Operations (Eastern Creek) Pty Ltd, Suez Recycling and Recovery Pty Ltd and Waste Assets Management Corporation appear to be operating out of the same facility, along with the operating name of Eastern Creek Waste Management Centre. This facility is located 180 m to the north of the site. This is licensed for 'generation of electrical power from gas and waste disposal by application to land'.

4.4 SafeWork NSW Records

A site search for records held by SafeWork NSW for the storage of hazardous chemicals on site was conducted on 3 February 2020. A copy of the records is provided in Appendix C.

No records pertaining to the site were found.

A number of records were noted for the adjacent site to the east and north (Lots 2, 10 and 11 Deposited Plan 1048435) related to above ground storage tanks (AST) for liquid petroleum gas, diesel, oil, sodium hydroxide, sodium hypchlorite and concentrated sulfuric acid (98%) solutions. An underground storage tank (UST) for oil was also noted in the adjacent site to the north east (Lot 2 DP1048435).

Based on the relative locations to the current site and the inferred groundwater flow directions these storage tanks are not considered to pose a significant contamination risk for the site.

4.5 Hazardous Building Materials

A hazardous building materials survey was undertaken by DP in 2015. The survey was completed on only accessible areas of the existing buildings, both internally and externally. Many of the buildings were not able to be accessed at the time. Of the buildings that could be accessed, the following outcomes were reported:

- Both friable and bonded forms of asbestos were identified predominantly internally in most of the buildings examined;
- Lead based paint was identified on the interior and exterior of a number of workshops; and
- PCB capacitors were identified in a number of the buildings.

5. Site Walkover

5.1 Observations in 2015

A site walkover was conducted on 30 April and 6 May 2015 by an Environmental Scientist from DP. Site features referred to herein are generally indicated on Drawing 1, Appendix A.

Entry to the site is gained from the south-west with an asphalt driveway leading into the site. Hardstand and gravel surfaced areas are located at the western portion of the site where the site buildings are largely concentrated. A steep slope separates the elevated hardstand and gravel surfaced areas to the lower vacant (undeveloped) areas covered with thick grass to the north and east of the site.

A large car park area is located to the east of the driveway. Stockpiles were observed in this area comprising basalt gravel and concrete. Coaches / buses were located at the northern end of the car park and a caravan / trailer was also located here. Building structures at the site included two large chicken egg-laying sheds, four large storage sheds, a toilet block, packing / boxing shed, egg processing room, feed shed, a workshop and two demountable style houses all with concrete floor slabs. Other structures were located around the site such as feed tanks and various sheds.

Poor drainage was indicated by stagnant pools of water and saturated soils to the east and south of the two egg-laying sheds. To the east of the northern most egg laying shed, a stockpile of malodorous soils was observed and may have been associated with chicken wastes and additional roadbase / concrete stockpiles were located nearby. Some car tyre stockpiles were also observed east of both egg-laying sheds.

North east of the south egg laying shed and to the east of the driveway, the concrete slab of a demolished building could be seen. The workshop featured broken asbestos cement walls and comprised machinery and chemicals stored on shelves / workbenches. The concrete hardstand in this area featured minor stains and cracks. Adjacent to the workshop, the undercover garage area featured heavy oil stains on the gravel surface whilst drums of chemicals were observed on concrete hardstand areas. Immediately west of the garage, concrete cracks were evident at the feed shed. Behind the feed shed (to the south), oily water was observed within a small pit in which a pump system fed. At the west side of the feed shed, two feed bins were located on concrete slabs and a small timber shed / office and shipping container were observed. A large storage shed with concrete floor was located near the south east boundary of the site where drums of silicone sealant were located. Two demountable houses were observed across the driveway from the storage shed.

To the west of the north egg laying shed was located one large feed bin on a concrete hardstand with some cracks and stains and a large cylindrical liquefied gas container. A storage shed with stained concrete floor slab was located to the north of the northern most egg laying shed. A large number of drums were stored in the shed on pallets and labels indicated contents comprising oil filters, oily rags, ‘aqueous waste’. Machinery presumed for the operation of feeders was also located in this storage shed.

A toilet block and storage shed area are located at the north west of the hardstand area with miscellaneous debris including scaffolding and household furniture around the edges of the building. Three elongated sheds are located in this area all with concrete floor slabs. In between and surrounding the sheds were large white and blue bulk bags filled with scrap hard and soft plastics and batteries. It is understood that the bags are delivered to the site for storage.

Vegetated stockpiles were observed along the edges of the hardstand and grassed areas as well as within the thick grass covered area to the east. The dam at the time of the site walkover did not appear to have any oil slicks at the water surface and the water was generally clear.

It is noted that off-gassing processes were occurring during fieldwork to the east of the site, understood to be part of waste processing by the adjacent SITA Resource Recovery Facility. It is noted that assessments conducted previously at adjacent sites by DP near the SITA Landfill located to the east of the site indicated the potential for methane gas at concentrations requiring further investigations.

5.2 Observations in 2019

A site walkover was conducted on 3 September 2019 followed by fieldwork completed on 16, 17, 18, 20, 23, 24 September 2019 by an Environmental Scientist from DP. Site photographs referred to herein are provided in Appendix C and site features are generally indicated on Drawing 1, Appendix A.

A large car park area is located to the east of the access driveway (Photo 2). Cars in varying states of wrecking were located at the northern end and a buses / trucks were located at the southern end of the carpark (Photo 21). Building structures at the site included two large chicken egg-laying sheds (Photo 1, 3, 5), four large storage sheds (Photo 13, 14, 15), a toilet block (Photo 11), packing / boxing shed (Photo 5), egg processing room, feed shed (Photo 5), a workshop (Photo 17, 18, 19) and two demountable style houses all with concrete floor slabs (Photo 6). Other structures were located around the site such as feed tanks, above ground storage tank (Photo 8) and various sheds.

Poor drainage was indicated by stagnant pools of water and saturated soils north of the southern egg-laying shed where a pit was observed which appears to be a sump feeding water to other buildings within the site (Photo 19). During the inspection and subsequent fieldworks, large stockpiles of general rubbish and debris were observed to the west of the main building area (Photo 4). These may have been associated with tenants progressively moving out from their leases. Large amounts of cut and stacked timber beams were present to the east of the northern three storage sheds.

North east of the southern egg laying shed and to the east of the driveway, the concrete slab of a demolished building could be seen. The workshop featured broken asbestos cement walls (Photo 17) and comprised machinery and chemicals stored on shelves / workbenches (Photo 18). The concrete hardstand in this area featured minor stains and cracks. Immediately west of the workshop, concrete cracks were evident at the feed shed. Behind the feed shed (to the south), oily water was observed within a small pit in which a pump system fed (Photo 19). This pit appeared to have decayed since the 2015 inspection with exposed metal girders and collapsing of the concrete slab. At the west side of the workshop a small timber shed / office and shipping container were observed. Two demountable houses were observed across the driveway from the storage shed.

To the west of the north egg laying shed was located one large feed bin on a concrete hardstand with some cracks and stains and a large cylindrical liquefied gas container (Photo 5, 8). A storage shed with stained concrete floor slab was located to the north of the northern most egg laying shed. A large number of drums were stored in the shed on pallets and labels indicated contents comprising oil filters, oily rags, 'aqueous waste' (Photo 7). Machinery presumed for the operation of feeders was also located in this storage shed.

A toilet block and storage shed area are located at the north west of the hardstand area with miscellaneous debris including scaffolding and household furniture around the edges of the building. The walls of the toilet block are suspected of containing asbestos in the form of bonded fibre cement sheeting. The fibre cement sheeting was observed to be in poor condition (Photo 11). Three elongated sheds are located in this area all with concrete floor slabs. In between the sheds were a number of cars in varying states of wrecking (Photo 15). During the inspection it was noted that one shed was used as a battery storage shed with large amounts of batteries in varying condition. Another shed was employed as a furniture distribution centre. The bases of the wall lining of these sheds appeared to contain asbestos in the form of bonded fibre cement sheeting. The fibre cement sheeting was observed to be in poor condition (Photo 13).

The dam adjacent to the central eastern boundary of the site, at the time of the site walkover did not appear to have any oil slicks at the water surface and the water was generally clear (Photo 12).

5.3 Observations in 2020

Fieldwork was conducted on 3, 4, 10, 20 and 26 February 2020 by an Environmental Engineer from DP. The site conditions were observed to be relatively consistent with those noted in 2019 with some exceptions listed below.

It was noted that at the time of fieldwork all the previous tenants had vacated the site, including the storage of vehicles and plant on the raised fill platform in the south. The demountable houses were observed to have been removed. In the far northern portion of the site several empty skip bins were being stored, with trucks observed delivering additional skip bins.

The surface water bodies around the site including the sump underneath the slab of one of the buildings in the middle of the site were still present and in similar condition to those observed in 2019. No additional surface water bodies or flow paths into the site were observed.

6. Preliminary Conceptual Site Model

A Conceptual Site Model (CSM) is a representation of site-related information regarding contamination sources, receptors and exposure pathways between those sources and receptors. The CSM provides the framework for identifying how the site became contaminated and how potential receptors may be exposed to contamination either in the present or the future i.e., it enables an assessment of the potential source - pathway - receptor linkages (complete pathways).

6.1 Potential Sources

Based on the previous and current investigations, the following potential sources of contamination and associated contaminants of potential concern (COPC) have been identified.

S1 – Fill of unknown origin:

COPC include metals, TPH, BTEX, PAH, PCB, OCP, PCB, phenols and asbestos.

S2 – Poultry keeping:

COPC include metals, OCP and OPP.

S3 – Maintenance / workshop facilities including mechanical feed systems:

COPC include metals, TPH, BTEX, PAH, and VOC.

S4 – Product storage within drums and bulk bags (including oily rags / filters and aqueous waste and batteries within bulk bags):

COPC include metals, TPH, BTEX and PAH.

S5 – Adjacent SITA resource recovery facility and landfill:

The primary COPC is methane gas. However, other volatile gases may be generated including petroleum and chlorinated hydrocarbons.

S6 – Existing buildings on site:

COPC include hazardous building materials such as asbestos, lead based paints, PCB capacitors and / or synthetic mineral fibres (SMF).

6.2 Potential Receptors

Human health receptors:

R1 – Construction and maintenance workers;

R2 – End users (commercial / industrial); and

R3 – Adjacent users (commercial/industrial).

It is noted that a search of the NSW Office of Water database in 2015 indicated one registered groundwater bore is located within 500 m from the site and is for monitoring purposes. There are no domestic bores with the potential to be used for drinking water within 1 km of the site.

Environmental receptors:

R4 – Water bodies (on site dam and tributaries of Eastern Creek);

R5 – Ecology; and

R6 – Groundwater (freshwater).

6.3 Potential Pathways

P1 – Ingestion and dermal contact;

P2 – Inhalation of dust and / or vapours;

P3 – Surface water run-off;

P4 – Leaching of contaminants and vertical migration into groundwater;

P5 – Lateral migration of groundwater providing base flow to water bodies; and

P6 – Direct contact with ecological receptors.

6.4 Summary of Preliminary CSM

A 'source - pathway - receptor' approach has been used to assess the potential risks of harm being caused to human, water or environmental receptors from contamination sources on or in the vicinity of the site, via exposure pathways (complete pathways). The possible pathways between the above sources (S1 to S6) and receptors (R1 to R6) are provided in Table 2 below

Table 2: Preliminary Conceptual Site Model

Source	Transport Pathway	Receptor	Risk Management Action Recommended
S1: Filling Metals, TPH, BTEX, PAH, PCB, OCP, PCB, phenols, asbestos **S2: Poultry keeping** metals, OCP, OPP **S3: Maintenance/ workshop facilities** Metals, TPH, BTEX, PAH and VOC **S4: Product**	P1 - Ingestion and dermal contact	R1: Construction and maintenance workers R2: End users (commercial / industrial)	An intrusive investigation is recommended to assess possible contamination including chemical testing of the soils, groundwater and atmosphere along the eastern boundary for methane gas and vapour impacts. If the site soils or groundwater are contaminated or methane gas or soil vapour present at unacceptable levels, mitigation / remediation measures will need to be implemented to manage the risk to the identified receptors.
	P2 - Inhalation of dust and / or vapours	R1: Construction and maintenance workers R2: End users (commercial / industrial) R3: Adjacent users (commercial / industrial)	
	P3 – Surface water run-off	R4: Water bodies (on site dam and Eastern Creek tributaries) R5: Ecology	
	P4 - Leaching of contaminants and vertical migration into groundwater		
	P5 - Lateral migration of groundwater providing base flow to water bodies	R5: Ecology R6: Groundwater (freshwater)	

Source	Transport Pathway	Receptor	Risk Management Action Recommended
storage within drums and bulk bags Metals, TPH, BTEX and PAH **S5: Adjacent Resource Recovery Facility** Methane gas, BTEX, TRH, VOC	P6 – Direct contact by ecological receptors.	R5: Ecology	
S6: Existing buildings Asbestos, lead, PCB, SMF	P1: Ingestion and dermal contact P2: Inhalation of dust and/or vapours	R1: Construction and maintenance workers R2: End users (commercial / industrial) R3: Adjacent users (commercial / industrial)	A hazardous building materials assessment report has been conducted separately (2015). Hazardous materials would need to be removed in accordance with relevant legislation and guidelines prior to bulk demolition, with the footprint of the buildings validated upon completion of demolition.

7. Fieldwork and Analysis

The contamination investigation has been devised broadly in accordance with the seven step data quality objective (DQO) process as specified in Schedule B2 of *National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013* (NEPC, 2013). The DQO process is included in Appendix D. Field and laboratory procedures were assessed against data quality indicators (DQIs) which are also included in Appendix D.

7.1 Soil Sampling and Monitoring Well Locations and Rationale

Test locations were determined at systematic and targeted locations based on potential contamination sources associated with the existing buildings, filling, asbestos debris, oil stains, maintenance and storage areas and the adjacent resource recovery facility.

The monitoring well locations were selected to target the following:

- Groundwater quality in the vicinity of the site sheds (BH20 and ABH01); and
- Groundwater and vapour quality in the vicinity of the adjoining waste recycling centre, and also hydraulically down-gradient within the site (ABH02, ABH03, BH201, BH204, BH208, BH211, BH2, BH4).

The test locations are shown on Drawings 2A and 2B in Appendix A. It is noted that BH20 could not be relocated in 2019 and 2020 and therefore could not be sampled at that time.

All test locations were terminated within natural material (soil or bedrock) unless prior refusal or limit of excavation was encountered.

Selected soil samples were analysed for the COPCs identified in the CSM. Samples were selected based on site observations (on-site asbestos screening, odour, staining etc), and their location within the subsoil strata (*i.e.,* targeting predominantly fill and surface samples), however, a number of deeper fill samples were also selected for analysis.

It is noted that test pit sampling would have been the preferred sampling method for fill in the previous investigations, therefore, an investigation comprising 15 test pits was included in the current investigation to address this data gap.

7.2 Drilling and Excavation Methods

The bores drilled in 2015 were continued using a DB520 drilling rig with a 100 mm diameter solid flight auger. NMLC coring was conducted through bedrock at BH2 and BH20. Drilling depths ranged from 0.7 m to 10 m bgl. Standard Penetration Tests (SPTs) were undertaken at regular intervals from 1.0 m depth at some test locations for geotechnical purposes.

The bores drilled in 2019 were continued using a Scout drilling rig with a 100 mm diameter solid flight auger at all borehole locations. NMLC coring was conducted through bedrock at BH208 to a depth of 10 m bgl. Drilling depths ranged from 1.5 m to 10 m bgl.

Bores in 2020 were drilled using a Commachio MCT 450 rig with using sonic drilling through soils and continued through rock using PQ coring for geotechnical purposes. Drilling depths ranged from 4.00 m to 25.22 m bgl.

Test pits excavated in 2020 utilised an 8-tonne tracked excavator extending into natural soils or to the limit of excavation, to depths of up to 4.5 m bgl.

7.3 Groundwater Wells

The groundwater monitoring wells, and the previous wells, were constructed of 50 mm diameter acid washed Class 18 PVC casing and machine slotted well screen. Joints were screw threaded, thereby avoiding the use of glues and solvents which may contaminate samples.

The wells were completed with a gravel pack extending to a minimum 0.5 m above the well screen, and then a minimum 0.5 m thick bentonite plug, and backfilled to the surface. The wells were capped with a self-sealing vapour sampling cap. All bores with wells were finished with a monument or gatic covers. Well construction details of the individual monitoring wells are included in the corresponding bore logs (attached) which should be read in conjunction with the attached explanatory notes that define classification methods and terms used to describe the soils and rocks.

7.4 Soil Sampling Procedures

Environmental sampling was performed with reference to standard operating procedures outlined in the DP *Field Procedures Manual*. All sampling data was recorded on bore logs (Appendix A) and samples selected for laboratory analysis were recorded on DP chain-of-custody (COC) sheets (Appendix F). The general soil sampling procedure comprised:

- Soil samples were recovered directly from the augers or SPT sampling tube. The augers and SPT tube were washed with Decon90 and water before commencing each bore;
- Use of disposable sampling equipment including disposal nitrile gloves;
- Transfer of samples into laboratory-prepared glass jars and capping immediately with Teflon lined lids;
- Labelling of sampling containers with individual and unique identification, including project number, sample location and sample depth;
- Field screening of replicate soil samples collected in sealed plastic bags for Total Photo-ionisable Compounds (TOPIC) using a calibrated PID; and
- Placement of sample containers and bags into a cooled, insulated and sealed container for transport to the laboratory.

Envirolab Services Pty Ltd (Envirolab), accredited by NATA for the analysis undertaken, was employed to conduct the primary sample analysis.

7.5 On-Site Asbestos Screening

In addition to the soil samples collected as per Section 7.4, 10 L bulk samples of soil were collected from the test pits TP1 - TP15 (ATP01-ATP15) at regular 1 m intervals or upon changes of strata. At the same depths a 500 mL duplicate sample was collected. The 10 L bulk samples were first weighed before being screened through a 7 mm sieve for potential asbestos containing materials. Any suspected materials were then collected and weighed in order to calculate the approximate asbestos in soil concentration. Based on the field results the recovered 500 mL duplicate samples and representative material samples were dispatched to a NATA accredited laboratory for further analysis.

7.6 Soil Gas Sampling

Soil gas was sampled from BH2, BH4 and BH20 in 2015, from six monitoring wells (BH201, BH204, BH213, BH208, BH2, BH4) in 2019 and from the same six monitoring wells again in two monitoring rounds in 2020 (February and April).

The air component of the well was purged initially (at least one well volume). Field readings of general gases were measured for a period of 5 to 10 minutes using a GA5000 meter, and methane, oxygen, carbon dioxide, carbon monoxide and hydrogen sulphide levels were recorded as shown on the field sheets included in Appendix F.

Air samples were then collected in 2019 and 2020 by connecting a sampling tube directly to 1 L Summa Canister with a flow regulator set by the analytical laboratory (at approximately 0.1 L/min). The regulators were supplied by the analytical laboratory and decontaminated by the laboratory prior to shipment. Back-up samples were collected directly into solid carbon tubes using an SKC constant flow air-sampling pump, low flow adapter and rotameter to confirm the flowrate (0.1 L/min).

The aim of the 2020 gas sampling was to conduct the sampling during a period of low or dropping atmospheric pressure where gas concentrations in soil are anticipated to be highest. However, given the reporting timeframes and unusual weather patterns at the time (i.e., extreme dry and then severe rain), timing such a circumstance was going to be difficult.

Based on the weather observations recorded at the Badgerys Creek weather station (nearest to the site), the atmospheric pressure on the day of soil gas sampling on 26 February 2020 was 1007 hPa at 9 am and 1003 hP at 3 pm. In addition, the maximum recorded pressure on 25 February was 1017 hPa and on 27 February was 1012 hPa. As such, the samples were taken during falling pressure on the 26 February 2020, in a period of low pressure when compared to days either side.

The atmospheric pressure on the day of soil gas sampling on 9 April 2020 was 1027 hPa at 9 am and 1024 hP at 3 pm. In addition, the maximum recorded pressure on 8 April was 1022 hPa and on 10 April was 1020 hPa. As such, the samples were taken during falling pressure on the 9 April 2020, but in a period of higher pressure when compared to days either side.

7.7 Groundwater Sampling

Subsequent to installation, the groundwater monitoring wells were developed by continuous pumping until dry, or until three well volumes were removed, or until the water was free of sediment / mud as determined by the environmental scientist on site. The purpose of well development was to remove as far as practicable sediment introduced via drilling and to facilitate the connection of the well to the local groundwater regime.

All re-used equipment was decontaminated between samples using a 3% solution of Decon 90 and rinsing with deionised water. The wells were micro-purged using a low flow pump (Geopump) until field parameters (pH, temperature, dissolved oxygen (DO), conductivity, total dissolved solids (TDS) and redox) had stabilised (field sheets are provided in Appendix F). Once field parameters had stabilised groundwater samples were collected using a low flow pump with adjustable flow rate, with disposable polyethylene tubing using the low flow pump. Samples were placed with a minimum of aeration into appropriately preserved bottles. Groundwater samples obtained for metal analysis were filtered in the field using an in-line disposable 0.45 µm filter that was changed between samples.

Sample handling and transport to Envirolab for analysis was conducted as described for soil sampling.

7.8 Surface Water Sampling

Surface water samples were collected directly from the targeted features previously identified during the site walkover. The surface water bodies were generally in low lying areas of the site, and therefore collecting surface water runoff from small localised catchments. Samples were filled from each of the identified features and were placed with a minimum of aeration into appropriately preserved bottles. Samples were collected from an approximate depth of 100 mm below the water surface.

Sample handling and transport to Envirolab for analysis was conducted as described for soil sampling.

7.9 Analytical Rationale

The analytical scheme for soil and groundwater samples was designed to obtain an indication of the potential presence and possible distribution of identified contaminants of potential concern identified by the CSM, being metals, TRH, BTEX, PAH, OCP, OPP, PCB, phenols, VOC and asbestos. The results of the analytical testing were compared with the adopted site assessment criteria (SAC) discussed in Section 8.

In terms of soil samples, the surface, near surface and fill samples were selected for analysis, being the most likely samples to contain contaminants at the sampled locations. 500 mL soil samples and recovered materials were analysed for FA & AF and asbestos identification respectively, based upon the on-site screening results.

Due to the sampling methodology adopted only the presence or absence of asbestos in jar samples provided to the laboratory was performed for the 2015 and 2019 investigations. The current investigation included assessment of soils from test pits using on-site screening and laboratory analysis for FA and AF which can provide a limited quantification of asbestos in soils.

8. Site Assessment Criteria

Based on the proposed for development into an energy from waste facility a commercial / industrial land use setting has been adopted as the land use in determining the SAC.

The SAC applied in the current investigation are informed by the CSM which identified human and ecological receptors to potential contamination on the site (refer to Section 4). Soil and Groundwater analytical results were assessed (as a Tier 1 assessment) against the investigation and screening levels of Schedule B1, NEPC (2013). NEPC (2013) is endorsed by the NSW EPA under the CLM Act 1997. Petroleum based health screening levels for direct contact have been adopted from the *Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) Technical Report no.10 Health screening levels for petroleum hydrocarbons in soil and groundwater* (2011) as referenced by NEPC (2013).

The investigation and screening levels are applicable to generic land use settings and include consideration of, where relevant, the soil type and the depth of contamination. The investigation and screening levels are not intended to be used as clean up levels. Rather, they establish concentrations above which further appropriate investigation (e.g., Tier 2 assessment) should be undertaken. They are intentionally conservative and are based on a reasonable worst-case scenario.

Methane gas concentrations were assessed against criteria specified in the NSW EPA *'Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases'* (November 2012) as described further in Section 9.3.

8.1 Soils

8.1.1 Health Investigation and Screening Levels

The Health Investigation Levels (HIL) and Health Screening Levels (HSL) are scientifically-based, generic assessment criteria designed to be used in the first stage (Tier 1) of an assessment of potential human health risk from chronic exposure to contaminants.

HILs are applicable to assessing health risk arising via all relevant pathways of exposure for a range of metals and organic substances. The HIL are generic to all soil types and apply generally to a depth of 3 m below the surface for residential use. Site-specific conditions may determine the depth to which HILs apply for other land uses.

HSLs are applicable to selected petroleum compounds and fractions to assess the risk to human health via inhalation and direct contact pathways. HSLs have been developed for different land uses, soil types and depths to contamination.

The generic HIL and HSL are considered to be appropriate for the assessment of contamination at the site. Given the proposed land use the adopted HIL and HSL are:

- **HIL-D** – Commercial / Industrial; and
- **HSL-D** – Commercial / Industrial.

It is noted that health screening levels for intrusive maintenance workers are listed in CRC CARE (2011), however, these have not been used as SAC for the current investigation as the screening levels are higher than HSL-D and therefore, not risk drivers for further assessment or management.

The HSL adopted are predicated on the inputs summarised in Table 3.

Table 3: Inputs to the Derivation of HSLs

Variable	Input	Rationale
Potential Exposure Pathway	Soil vapour intrusion (inhalation) / Direct contact	Both potential exposure pathways identified in the CSM. It is noted that direct contact HSLs are generally not the risk drivers for further site assessment for the same contamination source as the HSLs for vapour intrusion (NEPC, 2013).
Soil Type	Sand	Based on intrusive investigations at the site, filling was recorded to include sand (although generally a secondary component). In addition, sand is the most conservative medium for soil HSLs.
Depth to Contamination	0 m to <1 m	This depth range (being the most conservative) is adopted.

** Developed by CRC CARE (2011)*

The adopted soil HIL and HSL for the potential contaminants of concern are presented in Table 4.

Table 4: Health Investigation and Screening Levels (HIL and HSL) in mg / kg Unless Otherwise Indicated

Contaminants		HIL-D	HSL-D Direct Contact	HSL- D Vapour Intrusion[3]
Metals	Arsenic	3,000	-	-
	Cadmium	900	-	-
	Chromium (VI)	3,600	-	-
	Copper	240,000	-	-
	Lead	1,500	-	-
	Mercury (inorganic)	730	-	-
	Nickel	6,000	-	-
	Zinc	400,000	-	-
PAH	Benzo(a)pyrene TEQ[1]	40	-	-
	Naphthalene	-	11,000	3
	Total PAH	4,000	-	-
TRH	C6 – C10 (less BTEX) [F1]	-	26,000	260
	>C10-C16 (less Naphthalene) [F2]	-	20,000	NL
	>C16-C34 [F3]	-	27,000	-
	>C34-C40 [F4]	-	38,000	-
BTEX	Benzene	-	430	3
	Toluene	-	99,000	NL
	Ethylbenzene	-	27,000	NL
	Xylenes	-	31,000	230
Phenol	Pentachlorophenol (used as an initial screen)	660	-	-
OCP	Aldrin + Dieldrin	45	-	-
	Chlordane	530	-	-
	DDT+DDE+DDD	3,600	-	-
	Endosulfan	2,000	-	-
	Endrin	100	-	-
	Heptachlor	50	-	-
	HCB	80	-	-
	Methoxychlor	2,500	-	-
OPP	Chlorpyrifos	2,000	-	-
PCB [2]		7	-	-
VOC		PQL as initial screening concentration. Reference to national or international standards if above the PQL.		

Notes:
1 Sum of carcinogenic PAH
2 Non dioxin-like PCBs only
3 The soil saturation concentration (Csat) is defined as the soil concentration at which the porewater phase cannot dissolve any more of an individual chemical. The soil vapour that is in equilibrium with the porewater will be at its maximum. If the derived soil HSL exceeds Csat, a soil vapour source concentration for a petroleum mixture could not exceed a level that would results in the maximum allowable vapour risk for the given scenario. For these scenarios, no HSL is presented for these chemicals and the HSL is shown as 'not limiting' or 'NL'.

8.1.2 Ecological Investigation Levels

Ecological Investigation Levels (EIL) have been derived for selected metals and organic compounds and are applicable for assessing risk to terrestrial ecosystems (NEPC, 2013). EIL depend on specific soil physiochemical properties and land use scenarios and generally apply to the top 2 m of soil, which corresponds to the root zone and habitation zone of many species. The EIL is determined for a contaminant based on the sum of the ambient background concentration (ABC) and an added contaminant limit (ACL). The ABC of a contaminant is the soil concentration in a specific locality that is the sum of naturally occurring background levels and the contaminants levels that have been introduced from diffuse or non-point sources (e.g. motor vehicle emissions). The ACL is the added concentration (above the ABC) of a contaminant above which further appropriate investigation and evaluation of the impact on ecological values is required.

The EIL is calculated using the following formula:

EIL = ABC + ACL,

The ABC is determined through direct measurement at an appropriate reference site (preferred) or through the use of methods defined by Olszowy et al *Trace element concentrations in soils from rural and urban areas of Australia*, Contaminated Sites monograph no. 4, South Australian Health Commission, Adelaide, Australia 1995 (Olszowy, 1995) or Hamon et al, *Geochemical indices allow estimation of heavy metal background concentrations in soils*, Global Biogeochemical Cycles, vol. 18, GB1014, (Hamon, 2004). ACL is based on the soil characteristics of pH, CEC and clay content.

EIL (and ACLs where appropriate) have been derived in NEPC (2013) for only a short list of contaminants comprising As, Cu, Cr (III), DDT, naphthalene, Ni, Pb and Zn. An *Interactive (Excel) Calculation Spreadsheet* may be used for calculating site-specific EIL for these contaminants and has been provided in the ASC NEPM Toolbox available on the SCEW (Standing Council on Environment and Water) website (http://www.scew.gov.au/node/941).

The adopted EIL, derived from the *Interactive (Excel) Calculation Spreadsheet* are shown in the following Table 5. The following assumptions have been used to determine the EILs:

- A protection level of 60% for commercial and industrial land uses has been adopted;
- The EILs will apply to the top 2 m of the soil profile which corresponds to the root zone and habitation zone of many species;
- Given the likely source of soil contaminants (i.e., historical site use / fill) the contamination is considered as “aged” (>2 years);
- ABCs have been derived using the *Interactive (Excel) Calculation Spreadsheet* using input parameters of NSW for the State in which the site is located, and low for traffic volumes; and
- Site specific pH, and CEC values have been used as input parameters. Based on averaged pH and CEC values, the soil profile (in the upper layers) has an average pH of 7.47(range 4.5 to 8.3) and CEC of 28.04 cmol/kg (range 7.3 to 78).

Table 5: Ecological Investigation Levels (EIL) in mg / kg

Analyte		EIL	Comments
Metals	Arsenic	160	Adopted pH of 7.47 and CEC of 28.04 $cmol_c/kg$; assumed conservative clay content 10%
	Copper	320	
	Nickel	420	
	Chromium III	670	
	Lead	1800	
	Zinc	1000	
PAH	Naphthalene	370	
OCP	DDT	640	

8.1.3 Ecological Screening Levels - Petroleum Hydrocarbons

Ecological Screening Levels (ESL) are used to assess the risk of selected petroleum hydrocarbon compounds, BTEX and benzo(a)pyrene to terrestrial ecosystems. ESL apply to the top 2 m of the soil profile as for EIL.

ESL have been derived in NEPC (2013) for petroleum fractions F1 to F4 as well as BTEX and benzo(a)pyrene. Site specific data and assumptions as summarised in Table 6 have been used to determine the ESL. The adopted ESL, from Table 1B (6), Schedule B1 of NEPC (2013) are shown in Table 7.

Table 6: Inputs to the Derivation of ESL

Variable	Input	Rationale
Depth of ESL application	Top 2 m of the soil profile	The top 2 m depth below ground level corresponds to the root zone and habitation zone of many species.
Land use	Commercial / Industrial	Future development / land use is commercial / Industrial
Soil Texture	Coarse	Presence of sand within filling within top 2 m soil profile.

Table 7: Ecological Screening Levels (ESL) in mg/kg

Analyte		ESL	Comments
TRH	C6 – C10 (less BTEX) [F1]	215*	All ESLs are low reliability apart from those marked with * which are moderate reliability
	>C10-C16 (less Naphthalene) [F2]	170*	
	>C16-C34 [F3]	1700	
	>C34-C40 [F4]	3300	
BTEX	Benzene	75	
	Toluene	135	
	Ethylbenzene	165	
	Xylenes	180	
PAH	Benzo(a)pyrene	1.4	

It is noted that the NEPC (2013) ESL for benzo(a)pyrene is low reliability compared to the high reliability CRC CARE (2017) derived ecological guidelines which provide a high reliability guideline for 65% protection level of species (commercial and industrial land use), of 172 mg/kg (95% confidence limits of 57-371mg/kg).

8.1.4 Management Limits - Petroleum Hydrocarbons

In addition to appropriate consideration and application of the HSL and ESL, there are additional considerations which reflect the nature and properties of petroleum hydrocarbons, including:

- Formation of observable light non-aqueous phase liquids (LNAPL);
- Fire and explosion hazards; and
- Effects on buried infrastructure e.g. penetration of, or damage to, in-ground services.

Management Limits to avoid or minimise these potential effects have been adopted in NEPC (2013) as interim Tier 1 guidance. Management Limits have been derived in NEPC (2013) for the same four petroleum fractions as the HSL (F1 to F4). The adopted Management Limits, from Table 1B (7), Schedule B1 of NEPC (2013) are shown in the following Table 8. The following site specific data and assumptions have been used to determine the Management Limits:

- The Management Limits will apply to any depth within the soil profile;
- The Management Limits for commercial and industrial land uses apply; and
- A “coarse” soil texture has been adopted.

Table 8: Management Limits in mg/kg

Analyte		Management Limit
TRH	$C_6 – C_{10}$ (F1) #	700
	$>C_{10}$-C_{16} (F2) #	1,000
	$>C_{16}$-C_{34} (F3)	3500
	$>C_{34}$-C_{40} (F4)	10,000

Separate management limits for BTEX and naphthalene are not available hence these have not been subtracted from the relevant fractions to obtain F1 and F2

8.1.5 Asbestos in Soil

Bonded asbestos-containing material (ACM) is the most common form of asbestos contamination across Australia, generally arising from:

- Inadequate removal and disposal practices during demolition of buildings containing asbestos products;
- Widespread dumping of asbestos products and asbestos containing fill on vacant land and development sites; and
- Commonly occurring in historical fill containing unsorted demolition materials.

Mining, manufacturing or distribution of asbestos products may result in sites being contaminated by friable asbestos including free fibres. Severe weathering or damage to bonded ACM may also result in the formation of friable asbestos comprising fibrous asbestos (FA) and / or asbestos fines (AF).

Asbestos only poses a risk to human health when asbestos fibres are made airborne and inhaled. If asbestos is bound in a matrix such as cement or resin, it is not readily made airborne except through substantial physical damage. Bonded ACM in sound condition represents a low human health risk, whilst both FA and AF materials have the potential to generate, or be associated with, free asbestos fibres. Consequently, FA and AF must be carefully managed to prevent the release of asbestos fibres into the air.
A detailed asbestos assessment was not undertaken for all parts of these works, as the investigation process, particularly for the previous investigations, did not permit the volume of samples required (refer to Section 7). As such, the presence or absence of asbestos at a limit of reporting of 0.1 g/kg has been adopted for this assessment as an initial screen where the requisite investigation methods and analysis has been restricted.

Where asbestos is detected above this initial screen or is likely to be present based on other observations (e.g., large quantities of building materials in fill) additional testing as per WA DoH (2009) would be required to quantify the potential risk to human health. It is also noted that the current assessment does not cover thoroughly the building footprint areas, which would require further investigation following demolition to assess the potential risk for asbestos in soil.

However, the 2020 current investigation also included an assessment of (ATP01 to ATP15, as shown in Drawing 2A/B, Appendix A) in the south eastern fill platform using appropriate investigation

methods, as per WA DoH (2009), which allow for a quantitative assessment of asbestos concentrations in soil. These test locations can be assessed against the HSL provided in Table 7, Schedule B1 of NEPC (2013) as outlined below in Table 9.

Table 9: HSL D for asbestos contamination in soil

Form of asbestos	HSL D (% w/w)
Bonded ACM	0.05
FA and AF	0.001
All forms of asbestos	No visible asbestos for surface soil

8.2 Groundwater / Surface Water

The potential receptors of impacted groundwater from the site include:

- Localised groundwater (freshwater);
- On site dam and tributaries of Eastern Creek (freshwater), and
- Ecology.

8.2.1 Groundwater and Surface Water Investigation Levels

The Groundwater Investigation Levels (GIL) adopted in NEPC (2013) are based on:

- *Australian Drinking Water Guidelines* 2011 (ADWG);
- *Guidelines for Managing Risk in Recreational Waters* 2008 (GMRRW); and
- *National water quality management strategy. Australian and New Zealand guidelines for fresh and marine water quality* 2000 (ANZECC & ARMCANZ).

Registered groundwater bores in vicinity of the site are not used for drinking purposes and therefore drinking water criteria are not considered to be relevant for this contamination investigation. It is noted that the GILs adopted in NEPC (2013) have since been superseded by the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia (ANZG 2018).

Accordingly, the ANZG (2018) guidelines have been adopted for the current investigation. As the previous investigations were conducted with reference to the superseded GIL these have been left on Table G2 (Appendix G) for comparison. The adopted GIL for the analytes included in the assessment, and the corresponding source documents, are shown in Table 10.

Table 10: Groundwater Investigation Levels (in mg/L unless otherwise stated)

Analyte		ANZG (2018) Fresh Waters [a]	Comments
Metals	Arsenic	0.024 / 0.013	* Corrected for site averaged hardness of 790 mg/kg $CaCO_3$
	Cadmium	0.00037 *	
	Chromium	0.0048	
	Copper	0.0014	
	Lead	0.22 *	
	Mercury	0.0006	
	Nickel	0.18 *	
	Zinc	0.13 *	
PAH	Naphthalene	0.016	
	Benzo(a)pyrene	-	
BTEX	Benzene	0.90	
	Toluene	0.18	
	Ethylbenzene	0.08	
	Xylene (o)	0.35	
	Xylene (m+p)	0.075/0.2	
OCP	Chlordane	0.00003	
	DDT	0.000006	
	Endosulfan	0.00003	
	Endrin	0.00001	
	Heptachlor	0.00001	
	Aldrin + Dieldrin	0.00001	
	Lindane	0.0002	
	Heptachlor Expoxide	0.00001	
OPP	Chlorpyrifos	0.00001	
	Diazinon	0.00001	
	Dimethoate	0.00015	
	Fenitrothion	0.00002	
	Ethion	-	
PCB	Aroclor 1242	0.003	
	Aroclor 1254	0.0001	
VOC	Trichloroethene	0.33	Refer to Table G2 for a detailed list of VOCs
	Chloroform	0.37	

Notes:

a Investigation levels apply to typically slightly-moderately disturbed systems, 95% level of protection (LOP). 99% LOP adopted as recommended by ANZG (2018), further details per analyte provided on Table G2.

8.2.2 Health Screening Levels - Petroleum Hydrocarbons

The generic HSL are considered to be appropriate for the assessment of contamination at the site. Given the proposed land use the adopted HSL is:

- **HSL - D** - Commercial / Industrial.

In addition, the HSL adopted is predicated on the following inputs prescribed in Table 11.

Table 11: Inputs to the Derivation of HSLs

Variable	Input	Rationale
Potential exposure pathway	Groundwater vapour intrusion (inhalation)	Exposure pathway via groundwater vapour intrusion affects the adopted HSL.
Soil Type	Sand	Presence of sand in filling and a conservative soil type should be selected where the soil profile is not uniform (NEPC, 2013).
Depth to contamination	2 m to <4 m and 4 m to <8 m	Recorded depths to groundwater (prior to purging and sampling) ranged between 0.33 m and 4.91 m (Section 12). There are no available HSLs for depths of up to 2 m.

The adopted groundwater HSL for vapour intrusion, from Table 1A (4), Schedule B1 of NEPC (2013) are shown in the following Table 12.

Table 12: Groundwater Health Screening Levels (HSL) for Vapour Intrusion (µg/L)

Analyte		HSL- D
TRH	$C_6 – C_{10}$ (less BTEX) [F1]	6000
	$>C_{10}-C_{16}$ (less Naphthalene) [F2]	NL
BTEX	Benzene	5000
	Toluene	NL
	Ethylbenzene	NL
	Xylene	NL
PAH	Naphthalene	NL

Note: NL -The solubility limit is defined as the groundwater concentration at which the water cannot dissolve any more of an individual chemical based on a petroleum mixture. The soil vapour which is in equilibrium with the groundwater will be at its maximum. If the derived groundwater HSL exceeds the water solubility limit, a soil-vapour source concentration for a petroleum mixture could not exceed a level that would result in the maximum allowable vapour risk for a given scenario. For these scenarios no HSL is presented for these chemicals. These are denoted as not limiting 'NL'.

8.3 Methane Gas

The NSW EPA *'Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases'* (November 2012) references Benchmark Technique 19, 'Remediation of Uncontrolled Gas Emissions' from the NSW EPA *'Environmental Guidelines: Solid Waste Landfills'* (1996), with respect to methane concentration criteria within buildings. The benchmark indicates that the gas mitigation criteria for build-up of methane within a building should be < 1.25% by volume in air (this does not include ventilation spaces such as gravel blankets located below or adjacent to the building). The adopted criterion takes into account an intrinsic safety factor of at least 4 given that the methane is explosive at concentrations between 5 - 15% in air, equating to 25% of the lower explosive limit (LEL).

8.4 Soil Vapour

The investigation levels for soil vapour have been sourced from NEPC (2013), where available.

The interim health-based investigation levels (HIL) for and commercial / industrial sites provided in NEPC (2013) have been adopted as the initial investigation / screening levels for chlorinated hydrocarbons in soil vapour. The screening levels for chlorinated hydrocarbons are presented in Table 13, below.

Table 13: Interim Soil Vapour Health Investigation Levels for Chlorinated Compounds (mg/m^3)

Chemical	Commercial / Industrial (On-site)
TCE	0.08
1,1,1 – TCA	230
PCE	8
Cis, 1,2, -DCE	0.3
Vinyl chloride (VC)	0.1

For petroleum hydrocarbons, the soil vapour HSLs for vapour intrusion have been adopted as the initial investigation / screening levels. Based on the soil conditions encountered at the site the threshold levels for clay were adopted as the appropriate screening levels. The HSL D were adopted. For the majority of the soil vapour results the threshold values for 1-2 m bgl were adopted (as the soil vapour implants were installed at a depth of approximately 1.2 m to 1.5 m bgl). The investigation / screening levels for petroleum hydrocarbons adopted for the monitoring program are presented in Table 14, below.

Table 14: Soil Vapour HSLs for Vapour Intrusion (mg/m^3)

Chemical	HSL D	
	0 to 1 m	1 to 2 m
Toluene	6,500	100,000
Ethylbenzene	1,800	31,000
Xylenes	1,200	21,000
Naphthalene	4	85
Benzene	5	80
C6 – C10 (less BTEX) [F1]	1,000	19,000
>C10-C16 (less Naphthalene) [F2]	800	NL

9. Field Work Observations

Details of the subsurface conditions encountered in each borehole (including bores from 2015 and 2019) are provided in the detailed bore logs in Appendix E, together with notes defining classification methods and descriptive terms.

Based on observations, the subsurface profile can be broadly summarised as:

- FILLING - Variable filling comprising mixtures of silty clays, sand and gravel filling generally to shallow depths across the hardstand area (up to 0.6 m bgl) and generally across the site. Deeper fill was encountered at BH7 (2.7 m), BH9 (3.7 m), BH13 (1.2 m), BH14 (2.8 m), BH15 (2.5 m), BH20 (1.15 m), BH206 (2.6 m), BH211 (3.0 m) and BH212 (2.5 m), TP08 (3.1 m), TP09 (4.5 m), TP11 (2.7 m), TP12 (4.2 m), TP14 (2.8 m) and TP15 (4.4 m);

  Trace anthropogenics were encountered in some locations including roadbase aggregate, brick fragments and PVC pipe fragments at BH207, BH213 and BH220.

  Additional quantities of anthropogenics were noted in the elevated fill platform in the southern portion of the site (TP07 - TP15) and nearby areas (TP04 and TP03) including trace quantities of asbestos containing materials, concrete, bitumen and brick fragments, wood, organic fibres, gravel, metal, glass, terracotta and ceramics. Significant quantities of metal pipe were observed in TP14 indicating the potential significant variability in the fill comprising the fill platform.

  DP (2015) encountered traces of anthropogenic inclusions at some locations including brick, tile and concrete fragments, glass and slag;
- CLAYS - filling Firm to very stiff, brown, red, orange and grey silty or shaly clays underlain the or were recorded from the surface to depths up to 5.7 m bgl, underlain by; and
- SHALE - Extremely low strength, increasing to high strength dark grey shale.

Free groundwater was observed in BH204 at approximately 7.5 m bgl. No further free groundwater was observed during augering at any other bore location.

9.1 Asbestos in Soil

A summary of the field screening is provided in Table F1, Appendix F. Potential asbestos containing material (ACM) was observed in 11 samples at eight (8) locations, primarily associated with the raised fill platform and surrounding area in the southern portion of the site. Select material samples were dispatched to the analytical laboratory for confirmation. A complete summary of asbestos in soil results, including analytical results is summarised in Section 11.1.1.

9.2 Groundwater Levels

The water levels measured in the groundwater monitoring wells installed in BH201, BH204, BH208, BH213 and as part of DP (2015) BH2, BH4, BH20 are shown on Table 15 together with the dates the wells were installed, purged and readings were taken.

Table 15: Standpipe Details and Water Levels

Bore	Depth (m)	Surface level (R.L.)	Installed	Purged	Reading / date		
					Water level (m b.g.l.)	Water level (R.L.)	Date
April 2020 Investigation							
201	5.4	52.3	16/09/19	20/02/20	0.82	51.48	07/04/20
204	8.1	52.3	16/09/19	20/02/20	0.95	51.35	07/04/20
208	10	56.9	23/09/19	20/02/20	2.12	54.78	07/04/20
213	4.5	54.5	18/09/19	20/02/20	0.75	53.75	07/04/20
2	10	53.6	06/05/15	20/02/20	0.68	52.92	07/04/20
4	5	54.7	06/05/15	20/02/20	0.65	54.05	07/04/20
ABH01	15	58.3	03/02/20	20/02/20	3.75	54.55	07/04/20
ABH02	15	57.6	10/02/20	20/02/20	4.20	53.4	07/04/20
ABH03	5	54.4	04/02/20	20/02/20	1.1	53.3	07/04/20
ABH08	15	60.3	21/2/20	20/02/20	5.5	54.8	07/04/20
February 2020 Investigation							
201	5.4	52.3	16/09/19	20/02/20	3.5	48.8	28/02/20
204	8.1	52.3	16/09/19	20/02/20	0.85	51.45	28/02/20
208	10	56.9	23/09/19	20/02/20	3.1	53.8	28/02/20
213	4.5	54.5	18/09/19	20/02/20	0.75	53.75	28/02/20
2	10	53.6	06/05/15	20/02/20	0.8	52.8	28/02/20
4	5	54.7	06/05/15	20/02/20	0.4	54.3	28/02/20
ABH01	15	58.3	03/02/20	20/02/20	3.8	54.5	28/02/20
ABH02	15	57.6	10/02/20	20/02/20	4.8	52.8	28/02/20
ABH03	5	54.4	04/02/20	20/02/20	1.3	53.1	28/02/20
2019 Investigation							
201	5.4	52.3	16/09/19	17/09/19	4.8	47.5	24/09/19
204	8.1	52.3	16/09/19	17/09/19	1.3*	51.0	20/09/19
208	10	56.9	23/09/19	23/09/19	3.0	53.9	24/09/19
213	4.5	54.5	18/09/19	18/09/19	1.65*	52.85	20/09/19
2	10	53.6	06/05/15	17/09/19	0.85*	52.75	20/09/19

Bore	Depth (m)	Surface level (R.L.)	Installed	Purged	Reading / date		
					Water level (m b.g.l.)	Water level (R.L.)	Date
4	5	54.7	06/05/15	17/09/19	0.1*	54.3	20/09/19
2015 Investigation							
2	10	53.6	06/05/15	11/05/15; 13/05/15;	0.45	53.10	15/05/15
4	5	54.7	06/05/15	11/05/15; 13/05/15; 14/05/15	0.37	54.34	15/05/15
20	10	60.2	30/04/15	11/05/15; 13/05/15;	4.91	55.30	15/05/15

**Heavy rainfall immediately preceded the sampling*

During purging and sampling, no phase separated hydrocarbons or odours were detected using the interface meter. Field sheet logs were recorded during development and sampling and these are included in Appendix F. Measured groundwater levels (Relative Level) for DP monitoring wells were plotted using the computer program Surfer. Based on the derived contours, preferential groundwater flow was shown to be in a north-easterly direction across the site.

It should be noted in general, that groundwater levels are transient and will change with time and weather conditions. Additional information relating to the monitoring of groundwater levels is provided in the geotechnical investigation report that is being prepared separately.

9.3 Landfill Gas Monitoring

Complete records of the landfill gas monitoring prior to purging the wells and prior to sampling for general gases are included in Appendix F.

The field measured gas concentrations for 2019 and 2020 were generally low. The highest methane concentration recorded was at well 201 at 0.6% (v/v) during the 2019 sampling event, and the highest being 0.1% (v/v) across most wells during the 2020 sampling event. In addition, the maximum flow rate was recorded at well 201 at 0.3 L/hr for the 2019 sampling event and at 7.5 L/hr for BH204 during the 2020 sampling event.

Table 16 summarises the maximum methane and carbon dioxide concentrations and flow rates from the 2015, 2019 and 2020 sampling events.

Table 16: Soil Vapour Monitoring Summary of Results

Location	LFG Monitoring					
	CH_4		CO_2		Flow Rate	
	Max % (v/v)	Date	Max % (v/v)	Date	Max (Lhr)	Date
April 2020 Investigation						
BH201	0.1	09/04/20	4.3	09/04/20	0	09/04/20
BH02	0	09/04/20	0.3	09/04/20	0	09/04/20
BH04	0	09/04/20	5.7	09/04/20	0.1	09/04/20
BH204	0	09/04/20	1.7	09/04/20	0	09/04/20
BH208	0	09/04/20	4.7	09/04/20	0.1	09/04/20
BH213	0	09/04/20	0.8	09/04/20	0.1	09/04/20
Maximum GSV = 5.7 % *0.1 L/hr =0.0057 (CO_2) This equates to Characteristic Gas Situation (CGS) 1.						
February 2020 Investigation						
BH201	0.1	20/02/20	6.0	20/02/20	1.4	20/02/20
BH02	0.1	20/02/20	0.5	20/02/20	-0.2	20/02/20
BH04	0.1	20/02/20	1.7	20/02/20	0.1	20/02/20
BH204	0.1	20/02/20	4.4	20/02/20	7.5	20/02/20
BH208	0.1	20/02/20	4.0	20/02/20	-0.1	20/02/20
BH213	0.0	260/2/20	0.3	26/02/20	0.1	26/02/20
Maximum GSV = 4.4 % *7.5 L/hr =0.33 (CO_2) This equates to Characteristic Gas Situation (CGS) 2.						
2019 Investigation						
BH201	0.6	20/09/19	2.2	20/09/19	0.3	20/09/19
BH02	0	20/09/19	2.1	20/09/19	0.1	20/09/19
BH04	0.1	20/09/19	0.5	20/09/19	0.1	20/09/19
BH204	0	20/09/19	3.6	20/09/19	0.2	20/09/19
BH208	0.0	20/09/19	2.5	20/09/19	1.1	20/09/19
BH213	0	20/09/19	2.3	20/09/19	0.9	20/09/19
GSV = 3.6% * 0.2 = 0.0072 This equates to CGS 1.						
2015 Investigation						
BH2	0.1	15/05/15	6.3	15/05/15	-	-

Location	LFG Monitoring					
	CH_4		CO_2		Flow Rate	
	Max % (v/v)	Date	Max % (v/v)	Date	Max (Lhr)	Date
BH4	0	15/05/15	8.7	15/05/15	-	-
BH20	0	15/05/15	2.1	15/05/15	-	-
Note: no recorded gas flowrates for 2015 sampling event, therefore no CGS has been calculated						

Note: Gas Screening Value (GSV) is the maximum gas concentration multiplied by the maximum gas flow rate. It is used to assess the risk to the site and inform any mitigation requirements.
Where no positive flowrates were measured maximum negative flowrates have been recorded.

It is noted that the CO_2 concentrations in BH204 and BH208 had not peaked by the 5 minute monitoring mark during the 2019 investigation or at BH208 by the 10 minute mark. Whilst the maximum concentration at these two locations may not have been met, the increase in concentration in the final 2 minutes of monitoring was less than 10% and hence was not increasing significantly when screening was completed.

As indicated on the field gas monitoring sheets in Appendix F, CO readings exceeding 100 ppm were reported for BH204 and BH208 during the 2019 investigation. It is noted that at both these locations, the drilling process required coring through shale bedrock. In DP's experience, this process often results in high CO readings soon after the drilling. Given that these were the only boreholes subject to coring, it is considered likely that the coring of shale is the reason for the elevated CO readings. Further monitoring should confirm that to be the case.

These maximum readings characterise the gas situation at the site at a CGS of 2 and is classified as low risk as outlined in NSW EPA *Assessment and Management of Hazardous Ground Gases, 2019* (EPA, 2019), potentially requiring gas protection measures.

However, it is also noted that during the February 2020 investigation the gas parameters taken before purging of the wells for groundwater sampling purposes was conducted following a period of heavy rainfall. As such, with the exception of BH213 where no parameters were taken due to equipment error, the concentrations and measured flowrates were measured to be lower prior to gas sampling a week later. This was particularly noticeable for BH204 which had a lower maximum flowrate of 0.1 l/hr on 26 February 2020 and a maximum gas concentration of 0.3% (CO_2) for a GSV of 0.0003, corresponding to a Characteristic Gas Situation of 1, which is similar to the recorded values during the 2019 sampling event. Additionally, from the monitoring records it was noted that the flowrate quickly spiked to the maximum of 7.5 L/hr before continually decreasing down to 4.0 L/hr. It is considered possible that the nearby saturated soils contributed in generating an initial spike in flowrate from the ground gases being expelled from the pore spaces in the soil due to the rainfall.

Therefore, the elevated values detected during 20 February 2020 are not considered likely to be representative of general site conditions and are considered to be the result of the heavy rainfall preceding the testing. Results from the more recent April 2020 monitoring round, whilst from a shorter monitoring interval due to being taken prior to sampling, indicate a reduction in measured flow rates and concentrations which are more similar to the previous 2019 results supporting this reasoning that the heavy rainfall prior to the February monitoring round produced results not characteristic of general site conditions.

Overall these readings characterise the gas situation at the site at 1 corresponding to a very low risk as outlined in EPA (2019), requiring no further action. However, given the elevated detection during the 20 February 2020 monitoring event, additional monitoring is recommended to continue to further characterise the potential risk.

10. Analytical Results Summary

The results of the laboratory analysis undertaken are presented in the following tables attached in Appendix G:

Table G1a and G1b:	Soil Samples Results (2019);
Table G1c:	Soil (borehole) results (2015);
Table G1d:	Surface sample results (2015)
Table G1e:	Material sample results (2015)
Table G2:	Groundwater / Surface Water Results (2019);
Table G3:	Soil Vapour Report (2019); and
Table G4:	Preliminary Waste Classification.

The full NATA laboratory certificates together with the chain-of-custody and sample receipt information are included in Appendix H.

11. Analysis Results

11.1 2020 Investigation

11.1.1 Soil Samples

All analyte concentrations in the soil samples were found to be within health-based SAC with the exception of asbestos at two sample locations.

No FA and AF was detected by the laboratory.

ACM at greater than 7 mm in size was calculated to exceed the HSL of 0.005% w/w (for an assumed asbestos content of 15% for ACM) at two locations.

ACM was detected in near surface soils and materials samples during on-site screening in soil and by the laboratory. These detections are considered to exceed the HSL of "no visible surface asbestos" (which is generally taken as meaning the upper 100 mm).

Table 17 below summarises the asbestos HSL exceedances.

Table 17: Summary Asbestos HSL Exceedances

Sample	HSL D Exceedance (bold)		
	No Visible Surface Asbestos	Bonded ACM 0.05 % w/w	FA and AF % w/w
TP03/0-0.4	**Detection in near surface soils**	< 0.05	< 0.001
TP04/A1 / TP04/0-0.4	**Detection in near surface soils**	< 0.05	< 0.001
TP10/0-0.5 / TP10/A1	**Detection in near surface soils**	0.084	<0.001
TP14/A1 (TP14/0-0.2)	**Detection in near surface soils**	0.056	-

It is noted that asbestos was detected in several deeper samples (> 1 m bgl) as summarised in Table G1b, Appendix G. Depending upon the final landform and design these soils may present a potential health risk.

All samples were found to be within the adopted environmental SAC with the exception of the following:

- F2 (TRH C_{10} – C_{16} – naphthalene) in sample TP09/3.0-3.5; and
- benzo(a)pyrene (B(a)P) in samples TP09/1.5-2.0 and TP14/1.5-1.7.

When considered against the CRC CARE (2017) derived ecological guidelines which provide a high reliability for 65% protection level of species, of 172 mg/kg (95% confidence limits of 57-371 mg/kg) there are no detected exceedances for B(a)P, even when considering the lower 95% confidence limit of 57 mg/kg. It is noted that even with a more conservative lower confidence limit from CRC CARE (2017) for an 85% protection of species of 21 mg/kg the detected exceedances are not considered significant.

Using ProUCL statistical software (refer to Appendix G) for all fill samples for F2 resulted in a calculated 95% upper confidence limit (UCL) for F2 of 58.94 mg/kg (ESL 170 mg/kg). Therefore, the detected exceedance at TP09/3.0-3.5 is not considered statistically significant. It is also noted the exceedance was detected greater than 2 m bgl, such that the ESL do not strictly apply.

11.1.2 Groundwater and Surface Water

A number of minor exceedances compared ANZG (2018) were detected in groundwater and surface water across the site during the two monitoring rounds, including copper in all but four samples and the following:

- Detectable concentrations of ammonia above the SAC were recorded in ABH02 and BH204;
- Detectable concentrations of manganese above the SAC were recorded in ABH03, BH4, BH213, SW03 and SW04;
- Detectable concentrations of total chromium above the SAC were recorded in ABH02 and BH204;
- Detectable concentrations of nickel above the SAC were recorded in ABH03, BH204 and BH213; and
- Detectable concentrations of zinc above the SAC were recorded in SW06.

The concentrations are not considered to be significant and are in most cases reflective of regional urban conditions.

All other analytes were either below the laboratory limits of reporting and/or the SAC.

11.1.3 Soil Vapour

A number of minor detections were recorded in the laboratory analysis of the gas sampling at the site during the two monitoring rounds:

- Detectable concentrations of BTEX, TRH, MAH, chlorinated hydrocarbons and solvents were recorded in all samples.

All concentrations were less than the adopted SAC and do not pose a significant health risk. The source of detections is considered possibly to be from the nearby landfill facilities to the south, and north / north-east, as there is no obvious source on-site, or elsewhere off site. Based upon the inferred groundwater flow direction to the north east the source of the detection would more likely be attributable to the landfill facilities further to the south. However, no detected concentrations of BTEX, TRH or VOC were detected in any of the groundwater monitoring wells or surface water samples indicating on-site migration of contaminants through groundwater.

Continued vapour sampling and testing is recommended to further assess trends in these results. Again, it is noted that the concentrations detected are relatively low.

11.2 2019 Investigation

11.2.1 Soil Samples

All results for surface soil samples analysed for BTEX, Phenols, OCP / OPP / PCB and asbestos were below the adopted SAC and laboratory limits of reporting.

Detectable concentrations of PAH and fractions of TRH were recorded in BH206 0-0.2, BD3/20190916 (BH207 0.4-0.5), BH212 0-0.2, BH216 0.1-0.2, BH217 0.2-0.3, BH202 0-0.2, BH222 0-0.1, BH223 0.1-0.2, BH225 0.1-0.2, BH208 0-0.2 however, concentrations did not exceed the SAC.

A minor OCP detection was recorded in BH213 0.4-0.5 however the concentration did not exceed the SAC.

Metals concentrations were either less than the laboratory reporting limits and / or less than the SAC, with the exception of:

- Detectable concentrations of copper above the EIL were recorded in BH208 0-0.2 m; and
- Detectable concentrations of zinc above the EIL were recorded in BH217 0.2-0.3 m.

The above results for copper and zinc exceeded the EIL, but did not exceed the HIL. Using ProUCL statistical software (refer to Appendix G) for both copper and zinc, for all fill samples (including the 2015, 2019 and current investigation) resulted in 95% UCL for copper of 69.45 mg/kg (EIL 340 mg/kg) and zinc of 480.4 mg/kg (EIL 1500 mg/kg), such that the exceedances are not considered to be statistically significant

No asbestos was detected above the laboratory reporting limit in any of the samples.

11.2.2 Groundwater and Surface Water

A number of minor exceedances against ANZECC 2000 guidelines for fresh water were detected in both groundwater and surface water across the site:

- Detectable concentrations of ammonia above the SAC were recorded in BH201, BH204 and SW01;
- Detectable concentrations of cadmium above the SAC were recorded in BH201;
- Detectable concentrations of copper above the SAC were recorded in all samples with the exception of BH204;
- Detectable concentrations of lead above the SAC were recorded in SW02, SW03 and SW05; and
- Detectable concentrations of zinc above the SAC in all samples with the exception of BH2 and BH204;

The concentrations are not considered to be significant and are in most cases reflective of regional urban conditions.

11.2.3 Soil Vapour

A number of minor detections were recorded in the laboratory analysis of the gas sampling at the site:

- Detectable concentrations of BTEX, TPH, MAH, chlorinated hydrocarbons and solvents were recorded in all samples.

All concentrations were less than the adopted SAC. The source of detections is unknown, as there is no obvious source on site or off.

11.3 2015 Investigation

11.3.1 Surface Soils

All results for surface soil samples analysed for BTEX and PCB were below laboratory limits of reporting.

Detectable concentrations of OCP were recorded for S1 and S6 but were minor and did not exceed the SAC. All remaining OCP concentrations were less than the laboratory reporting limits.

Sample S6 was subjected to a wider analysis suite given the hydrocarbon staining at this location. Detectable concentrations of PAH and TRH fractions were recorded in S6, however, concentrations did not exceed the SAC.

Metals concentrations were either less than the laboratory reporting limits and / or less than the SAC, with the exception of:

- A zinc level exceeding the EIL for the site was detected at S5, however, as per the calculated 95% UCL for zinc of 480.4 mg/kg this result is not considered statistically significant; and
- The lead level at S12 exceeded both the HIL and EIL for the site at 3700 mg/kg. It is suspected that the source of lead contamination may be associated with the bulk bags on site used to store scrap plastics and batteries, some of which were located in close proximity. A material sample collected from the bulk bag and tested indicated an excessively high amount of lead. It is understood that significant lead concentrations were also detected within paint samples collected from sheds in the vicinity of S12 as part of the hazardous materials survey, which may contribute as a lead contamination source.

No asbestos was reported above the laboratory reporting limit. However, chrysotile asbestos was identified at a concentration below the laboratory detection limit in sample S5. It is likely that the asbestos within the surface soils at this location is sourced from the adjacent broken asbestos containing walls of the workshop. Due to the detection at the ground surface this is considered an exceedance of the HSL.

11.3.2 Material Sample

Results indicated significant lead (51,000 mg/kg) and zinc (890 mg/kg) from a sample collected from the contents of the bulk bags comprising predominately scrap hard and soft plastics. All such bags were well sealed, and no evidence of spillage was observed.

All remaining analyte concentrations were less than the reporting limit and / or less than the SAC (although not entirely relevant to these materials which will be removed from the site). It is noted that batteries which were observed within the bulk bags and the surrounding ground surface did not comprise the randomly collected sample from the bulk bag and therefore, is not reflected as part of the analytical results.

These results are no longer relevant given that the bags have now been removed. Given that the bags were sealed, there is not considered to be any significant impact on soils beneath or in the vicinity.

11.3.3 Soils (boreholes) and Dam Sediment

Soil samples collected from boreholes across the site recorded chemical concentrations below the laboratory detection limit for BTEX, OPP, OCP, PCB and VOCs. The remaining analyte concentrations were either less than the laboratory reporting limits and/or less than the adopted SAC, with the exception of the following:

- Copper at a concentration of 330 mg/kg at BH11/0-0.1 which marginally exceeds the EIL of 320 mg/kg for the site, as discussed earlier the calculated 95% UCL of 69.45 mg/kg is within the adopted EIL, such that this result is not considered statistically significant; and
- Benzo(a)pyrene at a concentration of 3.4 mg/kg at BH15/0.3-0.4 which exceeds the ESL of 1.4 mg/kg. However, when considered against the higher reliability CRC Care (2017) ESL the value is not considered significant.

Although not exceeding the SAC, the following detections are also noted:

- TPH C_{16}-C_{34} and C_{34}-C_{40} fractions recorded between 100 mg/kg and 300 mg/kg at BH15/0-0.1, BH15/0.3-0.4, BH16/0-0.1 and BH18/0-0.1;
- The highest detectable total PAH concentration of samples detected at BH15/0.3-0.4 (17 mg/kg);
- The above exceedances and notable concentrations are from test locations at the hardstand area near or adjacent to existing buildings, within surface soils and are likely to be associated with bulk bag storages, dilapidated buildings and associated maintenance / workshop activities; and
- With regard to the sediment sample collected from the dam, chemical concentrations were recorded below the laboratory detection limits with the exception of metals which were of low levels and within the adopted SAC.

11.3.4 Dam Water and Groundwater

All results for water collected from the installed groundwater monitoring wells were within the SAC adopted for the site. All results for the sample of water collected from the dam were also within the adopted SAC with the exception of copper which was detected slightly above the adopted GIL following hardness adjusted values specific for the dam and based on one sample collected. The slight exceedance, however, is unlikely to be significant and is within the same order of magnitude as the water samples collected from the monitoring wells.

11.3.5 Methane Gas

Methane gas was not detected within the ten minute monitoring period at all vapour / monitoring well locations with the exception of a 0.1% methane gas concentration recorded at BH2 within the first two minutes which is considered insignificant (refer to Appendix F for 2015 monitoring records).

11.4 Summary Soil Exceedances

Table 18 below presents a summary of soil samples exceeding the adopted SAC. Reference should be given to the previous Sections 11.1, 11.2 & 11.3 and Section 12 for further discussion regarding the significance of the results.

Table 18: Summary Soil SAC Exceedances

Sample ID	Analyte	Concentration (mg/kg)	Guideline Value (mg/kg)	Notes
S12/0-0.15	Lead	3700	1500 (HIL D & EIL)	-
B1	Lead	51,000	1500 (HIL D)	Bulk material sample, since removed.
TP09/3.0-3.5	TRH (C_{10}-C_{16} - naphthalene)	420	170 (ESL)	Calculated 95% UCL of 59 mg/kg within the ESL. Sample depth greater than 2 m.
TP09/1.5-2.0	B(a)P	2.6	1.4 (ESL)	Below CRC Care (2017) guideline of 172 (57-371) mg/kg
TP14/1.5-1.7	B(a)P	2.5	1.4 (ESL)	
BH15.0.3-0.4	B(a)P	3.4	1.4 (ESL)	
BH208/0-0.2	Copper	420	340 (EIL)	Calculated 95% UCL of 69 mg/kg within the EIL
BH11/0-0.1	Copper	330	340 (EIL)	
BH217/0.2-0.3	Zinc	3100	1500 (EIL)	Calculated 95% UCL of 480 mg/kg within the EIL
S5/0-0.15	Zinc	6200	1500 (EIL)	

11.5 Preliminary Waste Classification

11.5.1 Fill

With reference to the NSW EPA *waste classification guidelines* (2014), all results for soil (fill) samples analysed were less than the General Solid Waste (GSW) criteria without leaching (CT1) with the exception of exceedances of the following samples:

Lead (CT1: 100 mg/kg):

- TP03 0-0.4: 490 mg/kg;
- TP08 2-2.5: 220 mg/kg;
- TP14 1.5-1.7: 130 mg/kg;

- BH208 0.0-0.2: 180 mg/kg;
- BH208 0.0-0.2 (laboratory replicate): 140 mg/kg;
- BH213 0.4-0.5: 200 mg/kg;
- BH216 0.1-0.2: 150 mg/kg;
- BH217 0.2-0.3: 280 mg/kg;
- BH7 0-0.1: 160 mg/kg;
- BH13 0.4-0.5: 140 mg/kg;
- S5: 200 mg/kg;
- S11: 320 mg/kg;
- S12: 3700 mg/kg; and
- S15: 110 mg/kg.

Nickel (CT1: 40 mg/kg):

- BH216 0.1-0.2: 48 mg/kg;
- BH220 0.1-0.2: 95 mg/kg;
- BH208 0.0-0.2: 71 mg/kg;
- BH208 0.0-0.2 (laboratory replicate): 73 mg/kg;
- BH11 0 -0.1: 150 mg/kg; and
- BH12 0-0.1: 77 mg/kg.

Benzo(a)pyrene (CT1: 0.8 mg/kg):

- TP07 0.3-0.8: 1.0 mg/kg;
- TP09 1.5-2.0: 2.6 mg/kg;
- TP11 1-1.5: 0.92 mg/kg;
- TP14 1.5-1.7: 2.5 mg/kg;
- BH15 0.3-0.4: 3.5 mg/kg; and
- S6: 2.7 mg/kg.

Chromium (CT1: 100 mg/kg):

- BH11 0-0.1: 200 mg/kg.

Selected samples based on location and highest concentrations were analysed using TCLP to determine leachable concentrations. The TCLP results indicated that all samples tested recorded concentrations within the TCLP1 and SCC1 contaminant thresholds for GSW for metals.

Statistical analysis conducted for lead using ProUCL software (refer to Appendix G) resulted in a 95% UCL of 205 mg/kg, therefore the detected SCC at S12 of 3700 mg/kg is not considered statistically significant and based upon the TCLP values is within the TCLP1 and SCC1 contaminant thresholds for GSW.

Further analysis using ProUCL statistical software for benzo(a)pyrene and chromium across all samples (refer to Appendix G) resulted in 95% UCL of 0.5 mg/kg and 29 mg/kg respectively. Therefore, the benzo(a)pyrene and chromium exceedances of CT1 summarised above are not considered statistically significant and additional TCLP testing is not required at this stage to preliminarily classify the materials.

However, based upon the relative concentrations, age of the fill and absence of detection in groundwater samples additional TCLP testing of *ex-situ* soils may provide an additional line of evidence for the fill being within GSW criteria.

Asbestos, however, was detected at a number of locations, primarily associated with the elevated fill platform in the southern portion of the site and previously in a surface sample (S5). Drawing 3, Appendix A summarises the detection of asbestos across the site.

Based on the results, the filling material encountered at the site is preliminarily classified for off-site disposal purposes as:

- General Solid Waste (non-putrescible) - Special Waste Asbestos for materials shaded yellow in the attached Drawing 3, Appendix A; and
- General Solid Waste (non-putrescible) for all other areas.

It is also noted based upon analytical results and site observations that many of the structures on-site contain confirmed or potential asbestos containing materials. As such following demolition or alteration, the surrounding soils may be additionally impacted by asbestos. It is recommended that a detailed hazardous building materials survey and appropriate removal of these materials is conducted prior to demolition according to appropriate standards and regulations. The soils may also be impacted by some metals and hydrocarbons, and it is recommended that these soils to be stripped, waste classified and disposed off-site separately to the in-situ filling material onsite.

It is also noted that this is not a formal waste classification. All soils proposed to be removed from the site must be waste classified separately prior to disposal.

11.5.2 Preliminary VENM Assessment

Twelve primary samples collected from natural soils were tested and recorded concentrations within ANZECC background ranges (Table G4, Appendix G). In conjunction with visual field observations, the natural firm to very stiff, brown, red, orange and grey silty or shaly clays and extremely low strength, increasing to high strength dark grey shale as described in Section 9 are consistent with VENM. It is noted that if VENM is to be re-used on a receiving site, the material should be checked to comply with the receiving site's requirements.

This is a preliminary classification. All soils proposed to be removed from the site must be classified separately prior to disposal.

12. Discussion

12.1 Identified Contamination

On the basis of the field and analytical results presented herein, the currently identified contamination issues required to be remediated and / or managed as part of the proposed development include the following:

- Asbestos impacted soils (exceeding the adopted HSL of 0.05% w/w) at sample locations TP10 (ATP10) / 0-0.5 m, and TP14 (ATP14) / 0-0.2 m;
- ACM found in near surface soil (exceeding the adopted HSL of “no visible asbestos at the surface”) at sample locations TP03 (ATP03) and TP04 (ATP04); and
- Lead exceeding the EIL at sample location S12, located beneath one of the workshops.

In addition to the above, there are likely to be remediation and/or management protocols applied in relation to the following:

- Apart from the confirmed HSL exceedances for ACM identified above (all within the fill platform to the south-east), ACM detections were found in other samples within the fill (albeit below the HSL). Any proposed alteration to or re-use of the fill in this area will need to be managed to mitigate any risks associated with the presence of ACM; and
- The hazardous building materials survey conducted in 2015 (albeit limited) identified asbestos, lead and PCB contaminants as part of the building fabric in a number of the existing buildings. These materials must be properly managed and removed prior to bulk building demolition. Following demolition, a thorough assessment of the building footprints must be undertaken to assess any surface soil impacts imparted by the historical weathering or demolition of the buildings. The assessment may identify additional contamination to be remediated or managed.

The locations and areas discussed above are shown on Drawing 3, Appendix A

It is noted that based upon the previous investigation methods utilising boring rather than test pits, and current parts of the site being either inaccessible or untested (i.e. building footprints) there exists the potential for asbestos to be present in fill in other parts of the site above the SAC. Furthermore, there exists the potential for the demolition of the structures on-site to impact the soils within the building footprints.

However, it is also considered that the filling materials encountered in and around the south eastern fill platform are distinct as compared to the fill in other parts of the site (excluding building footprints), given the larger quantities of anthropogenic materials encountered, such that the risk of ACM being present in fill outside of the fill platform and building footprint areas (as shown by the yellow and green shaded areas in Drawing 3) is lower. Should any significant quantities of anthropogenic materials be identified in these lower risk areas then further assessment for asbestos may be required. This will be addressed in the remediation action plan (RAP).

12.2 Updated Conceptual Site Model

On the basis of the field and analytical results presented herein, the preliminary CSM presented in Section 6 is updated in the following Table 19, presenting likely source-pathway-receptor linkages.

Table 19: Conceptual Site Model

Source	Transport Pathway	Potential Receptor	Risk Management Action Recommended
Existing Fill	Direct contact	Construction and maintenance workers End users	Intrusive investigations have not identified high levels of COPC listed in the preliminary CSM, with the exception of asbestos in soil and lead at one test location. There is potential for asbestos to be present in fill in other areas of the site, particularly where building rubble is present (e.g. BH7, BH9 and BH14). Where asbestos contamination is known or found to be present, risk mitigation actions for construction and maintenance workers include the use of appropriate PPE during excavations into the fill. Where contaminants are found to be exceeding the SAC (either in the current investigation or future investigations), risk mitigation actions for end users can include excavation and disposal of the impacted fill, burial and capping of the impacted fill, or treatment of the fill to reduce concentrations (if appropriate). A procedure for the management of known and potential contamination is to be outlined in a remediation action plan.
Existing buildings	Ingestion and dermal contact Inhalation of dust and/or vapours	Construction and maintenance workers End users Adjacent users	A hazardous building materials assessment report has been conducted separately (2015). Where identified, and if found, hazardous materials would need to be removed in accordance with relevant legislation and guidelines prior to demolition, with the footprint of the buildings validated upon completion of demolition. Surface sampling from around and within building footprints have not identified the presence of asbestos or other contaminants in high concentrations. However, there remains a high probability that surface soils in these areas at present and / or following building demolition will contain asbestos to some extent. Past oil spills / leaks can often be detected through this post-demolition validation process also. The validation process is to be outlined in the remediation action plan.

Source	Transport Pathway	Potential Receptor	Risk Management Action Recommended
Adjacent Resource Recovery Facility	Inhalation of vapours	Construction and maintenance workers End users	Soil gas field readings and laboratory results suggest that migrating gases from adjoining sites are not likely to present a hazardous risk to the proposed development. However, this result is based on only three rounds of monitoring. Additional rounds of monitoring are required to counter for seasonal and temperature changes. The relatively impermeable sub-surface profile of clay and shale provides an effective buffer to soil gas migration, should such gases be generated from neighbouring sites.

12.3 Soil Management

Depending on final design site levels, there is the potential for relatively significant volumes of soil to be removed from site, particularly to accommodate the proposed waste pits.

As stated in Section 11.5, on the basis of current results, the filling material encountered at the site is preliminarily classified for off-site disposal purposes as General Solid Waste (non-putrescible) and / or General Soil Waste (non-putrescible) - Special Waste Asbestos under the NSW EPA (2014) waste classification guidelines (refer to Section 11.5 for more detail). Additional surface soils in the footprints of the poultry sheds and other buildings on site may be impacted with asbestos, some metals and hydrocarbons, and this may require these soils to be stripped, waste classified and disposed off-site separately to the remaining fill material onsite.

Natural soils to be removed from the site are likely to be classified as VENM.

The disposal of non-VENM soils to landfill is often a significant cost due largely to the waste levies imposed. Other options may be considered to manage such costs, including:

- Retaining and capping any identified contaminated soils; and / or
- Re-using suitable fill and removing predominantly surplus VENM.

13. Conclusions and Recommendations

In summary, the contamination status of the site, as determined through the investigations presented in this report, is as follows:

- Overall the soil testing indicated no analytes above the adopted health-based investigation criteria with the exception of lead at one location and asbestos in soil largely within an elevated fill platform location located in the south east of the site. It is noted however, that the majority of test locations were conducted using boreholes which are not the recommended method for assessing asbestos in soil, further reference should be given to the analysis presented within this report. The measured lead exceedance was considered to be associated with high levels of lead contained in paint samples from the nearby building, and from statistical analysis is not considered to be representative of soils across the site;
- Exceedances of environmental based criteria were detected in soils for copper, zinc benzo(a)pyrene and TRH (C10-C¬16). Statistical analysis for the entire sample set resulted in upper confidence limits within the adopted environmental based criteria for copper, zinc and TRH (C10-C¬16). The benzo(a)pyrene exceedances were not considered significant when compared to higher reliability CRC CARE (2017) guidelines;
- Groundwater and surface results indicated minor exceedances of the site assessment criteria for ammonia at two locations, and for chromium, nickel, manganese and zinc at a number of locations. These exceedances were considered to be indicative of regional groundwater quality rather than an on- or off-site contamination source. No detectable concentrations of TRH or VOC were observed; and
- Landfill gas monitoring results indicated zero to low gas flow rates produced from the monitoring wells in addition to low measured levels of landfill gases, corresponding to a characteristic gas situation of 1, requiring no further action currently. Soil vapour samples collected from the monitoring wells indicated minor detectable concentrations of BTEX, TPH, MAH, chlorinated hydrocarbons and solvents in all samples, but below the site assessment criteria. Given the non-detection of these compounds in groundwater and the local groundwater flow direction, it is considered unlikely that these concentrations are attributable to the nearby waste treatment facilities to the east and north.

Based on the past and present site uses, field and analytical data presented in this report, it is considered that the site has a relatively low water and / or vapour contamination risk, and has a low to moderate soil contamination risk, primarily in the form of asbestos in soil. Based on the identified asbestos contamination and further observations it is considered that there is a low to moderate risk for further asbestos contamination in unobserved or un-tested parts of the site, namely, within and beneath existing structures on site, and following demolition of these structures.

The site can be made suitable for the proposed development, subject to addressing the risk management actions identified in Section 12, namely:

- Update the hazardous building materials survey to include all buildings, noting that a number of buildings were not accessible in 2015;
- Removal of hazardous materials from existing buildings in accordance with relevant legislation, then validation of the building envelopes upon completion of building demolition;

- Continued rounds of soil gas sampling at a suggested quarterly interval for a period of one year to assess seasonal influences, if possible;
- Continued rounds of groundwater sampling (a potential source for soil gas) at a suggested quarterly interval at the same time as soil gas, if possible;
- Preparation of a remediation action plan (RAP) to outline the processes for managing identified soil contamination, outlining additional investigations (i.e., building envelopes), monitoring of soil gas and water, and attention to unexpected finds during future civil and construction works; and
- Implementation of the RAP.

14. Limitations

Douglas Partners (DP) has prepared this report (or services) for this project at 339 Old Wallgrove Road, Eastern Creek in accordance with DP's proposals listed in Section 1. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of Cleanaway and Macquarie c/- Arup Pty Ltd for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions on the site only at the specific sampling and / or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after DP's field testing has been completed.

DP's advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and / or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

Building materials which may contain asbestos were noted on the site.

Although the sampling plan adopted for this investigation is considered appropriate to achieve the stated project objectives, there are necessarily parts of the site that have not been sampled and

analysed. This is either due to undetected variations in ground conditions or to parts of the site being inaccessible (below the building footprint). It is therefore considered possible that hazardous building materials, including asbestos, may be present in unobserved or untested parts of the site, between and beyond sampling locations, and hence no warranty can be given that asbestos is not present.

Douglas Partners Pty Ltd

Appendix A

About This Report

and Drawings

About this Report

Douglas Partners

Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Conditions of Engagement for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.





Locality Plan

NOTE:
1: Base drawing from Nearmap.com (Dated 21/07/2019)

Legend

Site Boundary

0 50 100 m

Douglas Partners
Geotechnics / Environment / Groundwater

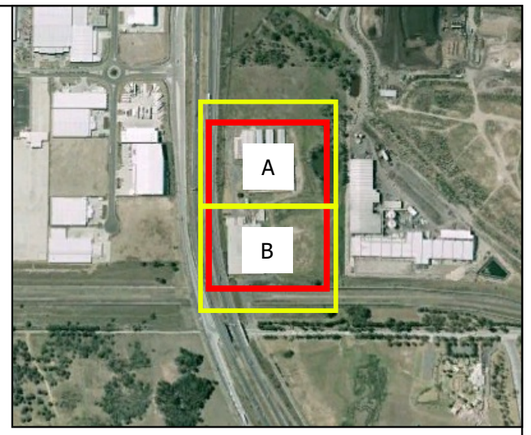
CLIENT:	Cleanaway Operations Pty Ltd		
OFFICE:	Sydney	DRAWN BY:	JJH
SCALE:	1:1750	DATE:	19/03/2019

TITLE: **Site Overview**
Detailed Site Investigation
339 Wallgrove Road, EASTERN CREEK

N

PROJECT No:	84822.03
DRAWING No:	1
REVISION:	0





Locality Plan

NOTE:
1: Base drawing from Nearmap.com (Dated 21/07/2019)
2: Drawing 2A and 2B extent shown in locality map

Legend

- Site Boundary
- Surface Water Samples (2019 and 2020)
- Test pit (2020)
- Borehole / Monitoring Well (2020)
- Borehole (2020)
- Boreholes / Monitoring Well (2019)
- Boreholes (2019)
- Hand Augered Boreholes (2019)
- Borehole (2015)
- Borehole / Monitoring Well (2015)
- Surface Samples (2015)
- Bag Sample (2015)

0 25 50 m

Douglas Partners
Geotechnics / Environment / Groundwater

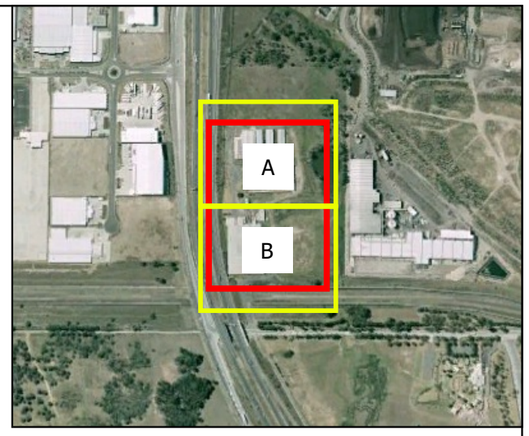
CLIENT:	Cleanaway Operations Pty Ltd		
OFFICE:	Sydney	DRAWN BY:	JJH
SCALE:	1:1000	DATE:	19/03/2019

TITLE: **Current and Previous Test Locations**
Detailed Site Investigation
339 Wallgrove Road, EASTERN CREEK

N

PROJECT No:	84822.03
DRAWING No:	2A
REVISION:	0





Locality Plan

NOTE:
1: Base drawing from Nearmap.com (Dated 21/07/2019)
2: Drawing 2A and 2B extent shown in locality map

Legend

- Site Boundary
- Surface Water Samples (2019 and 2020)
- Test pit (2020)
- Borehole / Monitoring Well (2020)
- Borehole (2020)
- Boreholes / Monitoring Well (2019)
- Boreholes (2019)
- Hand Augered Boreholes (2019)
- Borehole (2015)
- Borehole / Monitoring Well (2015)
- Surface Samples (2015)
- Bag Sample (2015)

0 25 50 m

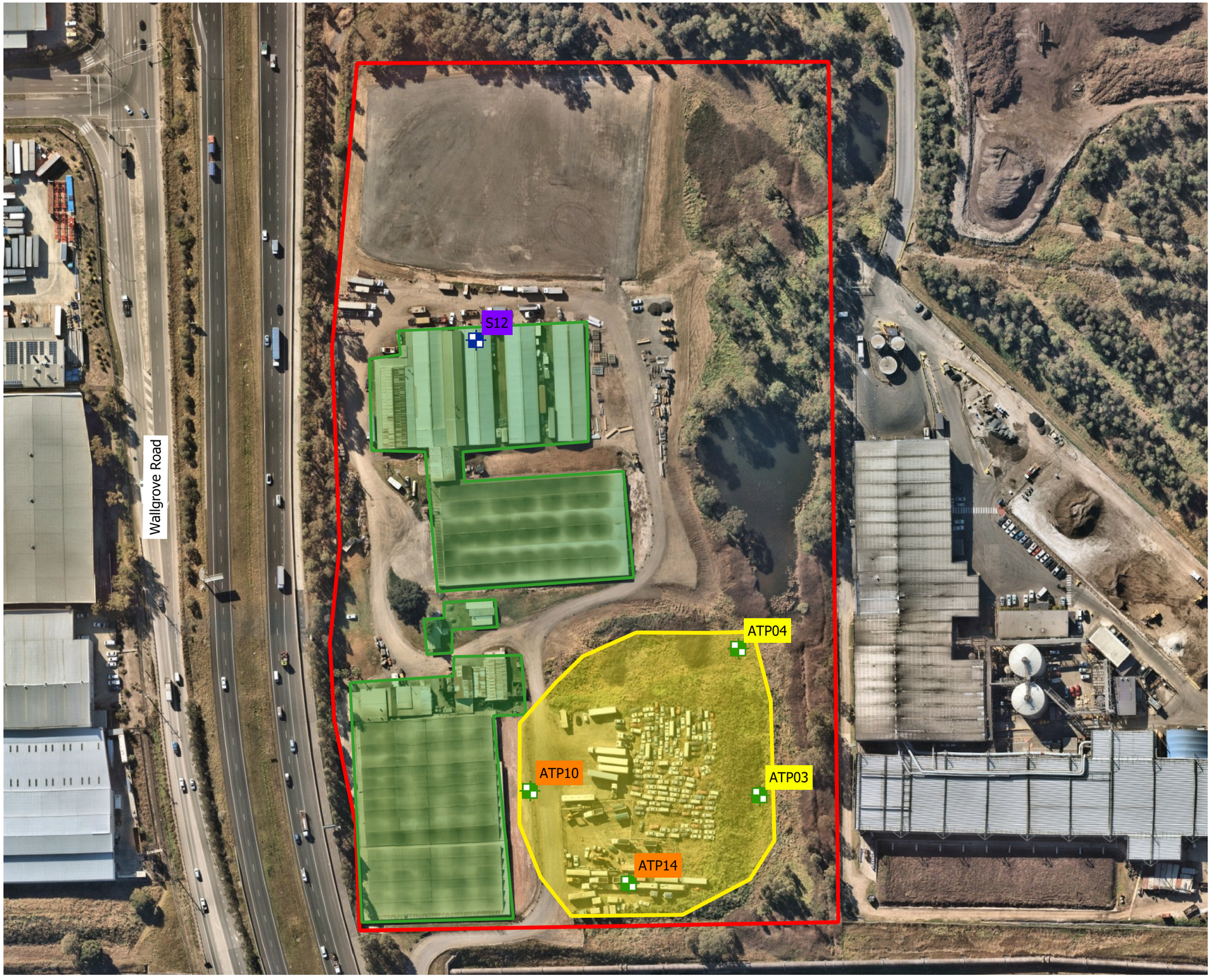
Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT:	Cleanaway Operations Pty Ltd		
OFFICE:	Sydney	DRAWN BY:	JJH
SCALE:	1:1000	DATE:	19/03/2019

TITLE: **Current and Previous Test Locations**
Detailed Site Investigation
339 Wallgrove Road, EASTERN CREEK

N

PROJECT No:	84822.03
DRAWING No:	2B
REVISION:	0





Locality Plan

NOTE:
1: Base drawing from Nearmap.com (Dated 21/07/2019)

Legend

- Site Boundary
- ACM Detected (HSL Exceedance)
- ACM Detected in near surface soils
- Lead EIL Exceedance
- Area with variable ACM impact to be considered in soil management and off-site disposal
- Areas with high risk of ACM at the surface to be tested following demolition

0 50 100 m

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT:	Cleanaway Operations Pty Ltd		
OFFICE:	Sydney	DRAWN BY:	JJH
SCALE:	1:1750	DATE:	19/03/2019

TITLE: **Identified Contamination**
Detailed Site Investigation
339 Wallgrove Road, EASTERN CREEK

N

PROJECT No:	84822.03
DRAWING No:	3
REVISION:	0

Appendix B

Site Photographs



Photo 1: Southern chicken sheds - looking west



Photo 2: Southern machinery yard - looking east



Photo 3: Internal southern chicken sheds - looking west



Photo 4: Central western boundary rubbish piles- looking north

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Cleanaway c/- Arup Pty Ltd		TITLE: **Due Diligence (Contamination) Investigation** **Proposed Redevelopment** **339 Old Wallgrove Rd, Eastern Creek**	PROJECT No:	84822.02
	OFFICE: Sydney	DRAWN BY: JS		PLATE No:	1
	SCALE: N/A	Sep-19		REVISION:	0



Photo 5: Central chicken shed and packing shed to the north - looking east



Photo 6: Elevated land to south of central chicken shed and demountable style house - looking east



Photo 7: Internal storage shed to north of central chicken shed



Photo 8: Above gorund storage tank to west of central chicken shed - looking north west

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Cleanaway c/- Arup Pty Ltd		TITLE: **Due Diligence (Contamination) Investigation** **Proposed Redevelopment** **339 Old Wallgrove Rd, Eastern Creek**	PROJECT No:	84822.02
	OFFICE: Sydney	DRAWN BY: JS		PLATE No:	2
	SCALE: N/A	Sep-19		REVISION:	0



Photo 9: Pad to north of buildings onsite - looking north



Photo 10: Pad to north of buildings - looking south



Photo 11: Suspected ACM fibre cement sheeted building in the bathroom building in the central north elevation of site



Photo 12: Drainage pipe from Suez facility to east - looking south east

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Cleanaway c/- Arup Pty Ltd		TITLE: **Due Diligence (Contamination) Investigation**	PROJECT No:	84822.02
	OFFICE: Sydney	DRAWN BY: JS	**Proposed Redevelopment**	PLATE No:	3
	SCALE: N/A	Sep-19	**339 Old Wallgrove Rd, Eastern Creek**	REVISION:	0



Photo 12: Dam adjacent eastern boundary - looking south



Photo 13: Suspected ACM wall lining to northern warehouses



Photo 14: Internal northern warehouse - looking south



Photo 15: Wrecked cars between northern warehouses - looking south

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Cleanaway c/- Arup Pty Ltd		TITLE: **Due Diligence (Contamination) Investigation**	PROJECT No:	84822.02
	OFFICE: Sydney	DRAWN BY: JS	**Proposed Redevelopment**	PLATE No:	4
	SCALE: N/A	Sep-19	**339 Old Wallgrove Rd, Eastern Creek**	REVISION:	0



Photo 16: Area to south of northern warehouses and north of central chicken shed - looking west



Photo 17: Suspected ACM wall lining to southern worksheds, north of southern chicken shed - looking south west



Photo 18: Internal southern worksheds, north of southern chicken shed



Photo 19: Sump in southern worksheds, north of southern chicken sheds

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Cleanaway c/- Arup Pty Ltd		TITLE: **Due Diligence (Contamination) Investigation**	PROJECT No:	84822.02
	OFFICE: Sydney	DRAWN BY: JS	**Proposed Redevelopment**	PLATE No:	5
	SCALE: N/A	Sep-19	**339 Old Wallgrove Rd, Eastern Creek**	REVISION:	0



Photo 20: Fill area to north east of southern chicken shed - looking north east



Photo 21: Wrecked cars in south eastern corner of site - looking east

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Cleanaway c/- Arup Pty Ltd		TITLE: **Due Diligence (Contamination) Investigation** **Proposed Redevelopment** **339 Old Wallgrove Rd, Eastern Creek**	PROJECT No:	84822.02
	OFFICE: Sydney	DRAWN BY: JS		PLATE No:	6
	SCALE: N/A	Sep-19		REVISION:	0



Photo 1: Fill composition in raised fill platform TP14



Photo 2: Metal pipes encountered in fill at TP14

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT:	84822.03
	Environmental Impact Study	PLATE No:	8
	339 Wallgrove Road, EASTERN CREEK	REV:	0
	CLIENT: Cleanaway Operations Pty Ltd	DATE	23/03/2020



Photo 3: Deeper fill at TP15



Photo 4: Shallow fill at TP11

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT:	84822.03
	Environmental Impact Study	PLATE No:	9
	339 Wallgrove Road, EASTERN CREEK	REV:	0
	CLIENT: Cleanaway Operations Pty Ltd	DATE	23/03/2020



Photo 5: Shallow fill at TP07



Photo 6: Fill composition at TP09, including car tires

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT:	84822.03
	Environmental Impact Study	PLATE No:	10
	339 Wallgrove Road, EASTERN CREEK	REV:	0
	CLIENT: Cleanaway Operations Pty Ltd	DATE	23/03/2020



Photo 7: Shallow fill at TP04



Photo 8: Very shallow fill at TP02

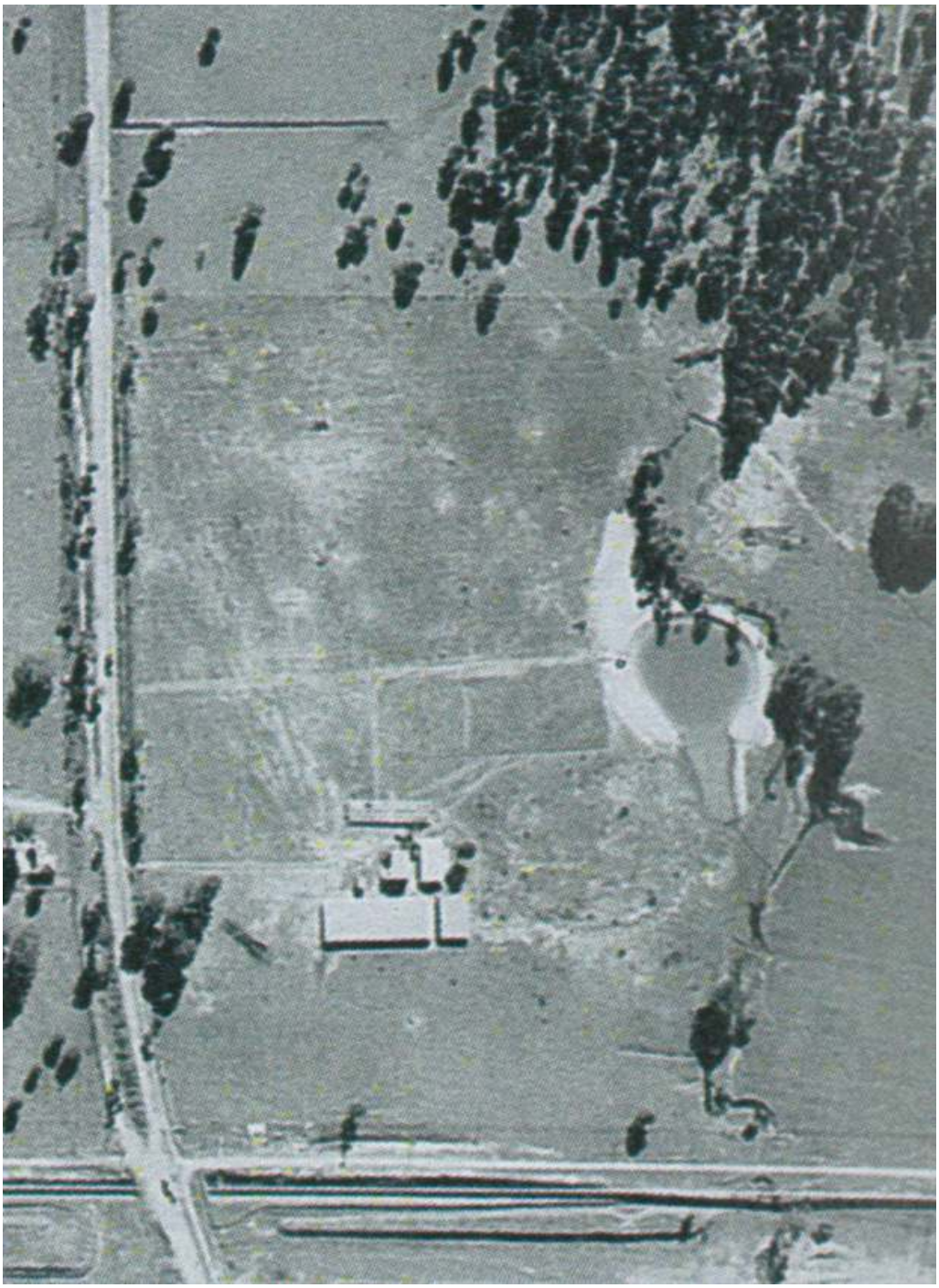
Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT:	84822.03
	Environmental Impact Study	PLATE No:	11
	339 Wallgrove Road, EASTERN CREEK	REV:	0
	CLIENT: Cleanaway Operations Pty Ltd	DATE	23/03/2020

Appendix C

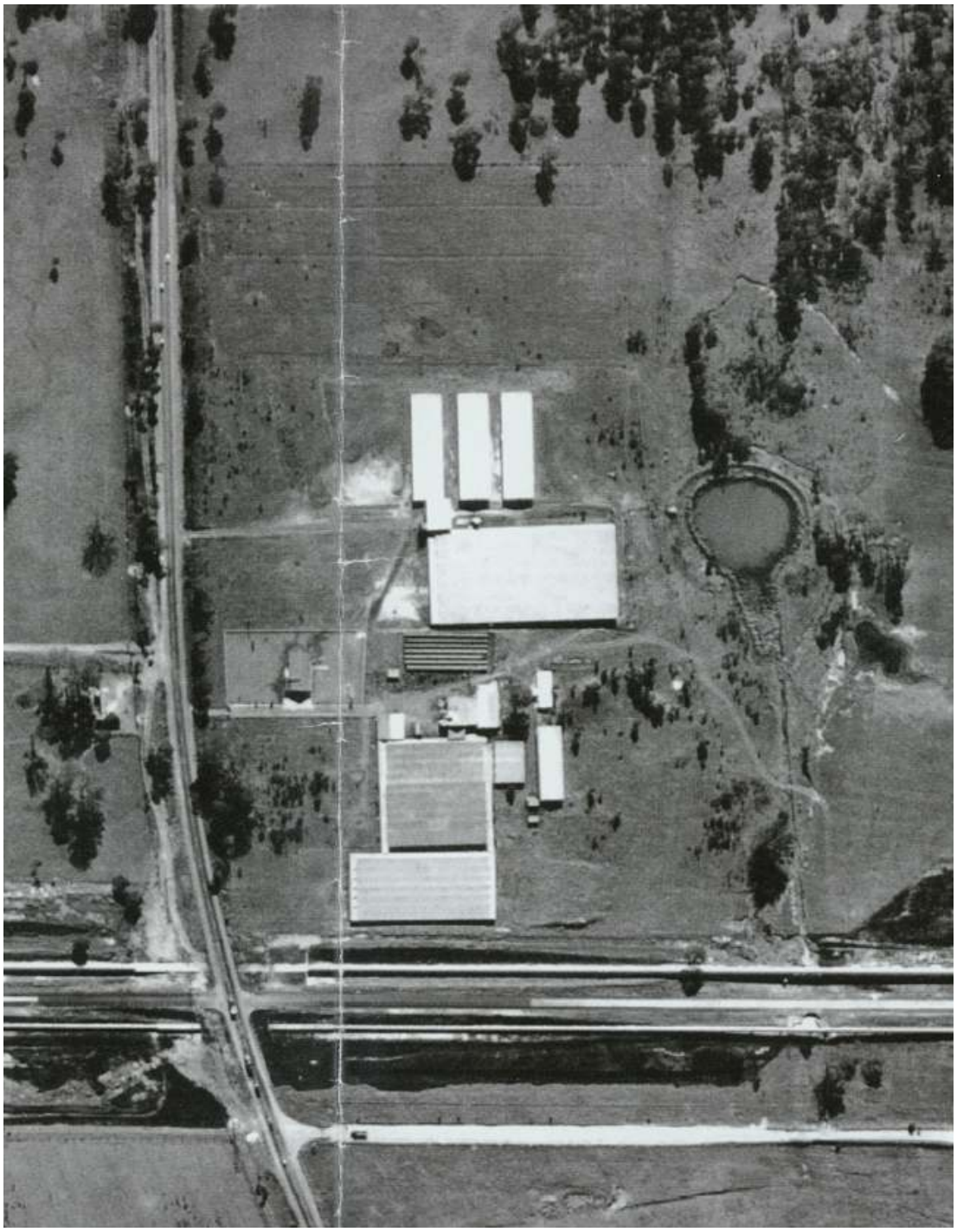
Site History Documentation



Douglas Partners Geotechnics / Environment / Groundwater	**Aerial Photograph - 1951** **Due Diligence Investigation** **339 Wallgrove Rd, Eastern Ck**	PROJECT: 84822.02 DWG No: 1 REV: A
	CLIENT: Cleanaway c/- Arup Pty Ltd	DATE: 27-Sep-19



Douglas Partners Geotechnics / Environment / Groundwater	**Aerial Photograph - 1961** **Due Diligence Investigation** **339 Wallgrove Rd, Eastern Ck**	PROJECT: 84822.02 DWG No: 2 REV: A
	CLIENT: Cleanaway c/- Arup Pty Ltd	DATE: 27-Sep-19



Douglas Partners Geotechnics / Environment / Groundwater	**Aerial Photograph - 1970** **Due Diligence Investigation** **339 Wallgrove Rd, Eastern Ck**	PROJECT: 84822.02 DWG No: 3 REV: A
	CLIENT: Cleanaway c/- Arup Pty Ltd	DATE: 27-Sep-19



Douglas Partners Geotechnics / Environment / Groundwater	**Aerial Photograph - 1986** **Due Diligence Investigation** **339 Wallgrove Rd, Eastern Ck**	PROJECT: 84822.02 DWG No: 4 REV: A
	CLIENT: Cleanaway c/- Arup Pty Ltd	DATE: 27-Sep-19



Douglas Partners Geotechnics / Environment / Groundwater	**Aerial Photograph - 2009** **Due Diligence Investigation** **339 Wallgrove Rd, Eastern Ck**	PROJECT: 84822.02 DWG No: 5 REV: A
	CLIENT: Cleanaway c/- Arup Pty Ltd	DATE: 27-Sep-19



Douglas Partners Geotechnics / Environment / Groundwater	**Aerial Photograph - 2014** **Due Diligence Investigation** **339 Wallgrove Rd, Eastern Ck**	PROJECT: 84822.02 DWG No: 6 REV: A
	CLIENT: Cleanaway c/- Arup Pty Ltd	DATE: 27-Sep-19

Applicant Details

Your reference 84822.03

DOUGLAS PARTNERS
96 HERMITAGE ROAD
WEST RYDE NSW 2114

Certificate Details

Certificate no. PL2020/01276 **Fee: $133.00**

Date issued 03 February 2020 **Urgency fee: $81.00**

Receipt no. ePay Ref 42518

Property information

Property ID 344329 **Land ID** 344329

Legal description LOT 1 DP 1059698

Address 339 WALLGROVE ROAD EASTERN CREEK NSW 2766

County CUMBERLAND **Parish** MELVILLE

PLANNING CERTIFICATE (Section 10.7(2 & 5))

Blacktown City Council prepared this Planning Certificate under Section 10.7 of the *Environmental Planning and Assessment Act 1979*. The form and content of the Certificate is consistent with *Environmental Planning and Assessment Regulation 2000*.

Disclaimer

Blacktown City Council gives notice and points out to all users of the information supplied herein, that the information herein has been compiled by Council from sources outside of Council's control. While the information herein is provided with all due care and in good faith, it is provided on the basis that Council will not accept any responsibility for and will not be liable for its contents or for any consequence arising from its use, and every user of such information is advised to make all necessary enquiries from the appropriate organisations, institutions and the like. Blacktown City Council also gives notice to all users of the information supplied herein, wherever any particular enquiry herein remains unanswered or has not been elaborated upon, such silence should not be interpreted as meaning or inferring either a negative or a positive response as the case may be.

Section 10.7(2)

The following information is provided under Section 10.7(2) of the *Environmental Planning and Assessment Act 1979*. The information relates to the subject land at the date of this Certificate.

---

1. Names of relevant planning instruments and development control plans

1.1 Environmental Planning Instrument

As at the date of this certificate the abovementioned land is not affected by Blacktown Local Environmental Plan 2015.

The land is affected by the *State Environmental Planning Policy (Western Sydney Parklands) 2009.*

1.2 Proposed Local Environmental Plans

Not applicable.

1.3 Other Applicable State Environmental Planning Policies

Attachment 1 contains a list of State Environmental Planning Policies that may apply to the carrying out of development on the subject land.

1.4 Proposed State Environmental Planning Policies

Council is not aware of any proposed State Environmental Planning Policy that is or has been the subject of community consultation or on public exhibition under the Act, applying to the subject land.

1.5 Development control plans

Blacktown Development Control Plan 2015 applies to the subject land.

2. Zoning and land use under relevant environmental planning instruments

The following information will assist in determining how the subject land may be developed. It is recommended that you read this section in conjunction with a full copy of any relevant environmental planning instrument as there may be additional provisions that affect how the land may be developed.

2.1 Zoning

Under *State Environmental Planning Policy (Western Sydney Parklands) 2009,* the land is zoned:

Unzoned

2.2 Minimum land dimensions for the erection of a dwelling house

Not applicable

2.3 Critical habitat

The land does not include or comprise a critical habitat.

Note: Critical habitat registers are kept by the National Parks and Wildlife Service under the *Threatened Species Conservation Act 1995* and the Department of Fisheries under the *Fisheries Management Act 1994*.

2.4 Conservation areas

The land is not within a conservation area.

2.5 Environmental Heritage

The land does not contain an item of environmental heritage under the protection of State Environmental Planning Policy (Western Sydney Parklands) 2009

3. Complying development

Complying development may or may not be carried out on the subject land under an Environmental Planning Policy. Council does not have sufficient information to determine the extent to which specific complying development may or may not be carried out.

4. Coastal protection

The subject land is not affected by the operation of Sections 38 or 39 of the *Coastal Protection Act, 1979*.

5. Mine subsidence

The subject land has not been proclaimed to be a mine subsidence district within the meaning of Section 15 of the *Mine Subsidence Compensation Act 1961*.

6. Road widening and road realignment

The subject land is not affected by road widening or road realignment under an environmental planning instrument.

7. Council and other public authority policies on hazard risk restrictions

7.1 Contaminated Lands Policy and Asbestos Policy Schedule 6

Council has adopted a Contaminated Lands Policy and an Asbestos Policy which may restrict development on the subject land.

The Land Contamination Policy applies when zoning or land use changes are proposed on land which has previously been used for certain purposes or has the potential to be affected by such purposes undertaken on nearby lands. The Asbestos Policy applies where land contains, or is likely to have contained in the past, buildings or structures that were erected prior to the banning of asbestos. Both policies should be considered in the context of relevant State legislation and guidelines.

Council's records may not be sufficient to determine all previous uses on the land, or determine activities that may have taken place on this land.

7.2 Other policies on hazard risk restrictions

Council has not adopted any other policies to restrict the development of the subject land by reason of the likelihood of landslip, bushfire, tidal inundation, subsidence or the occurrence of acid sulphate soils.

Note: Although Council has not adopted a specific policy to restrict development bushfire prone land, it is bound by state-wide bushfire legislation that may restrict development on the subject land. Additional information relating to bushfire prone land is provided at point 11 below.

7a. Flood related development controls information

There are currently no mainstream or backwater flood-related development controls adopted by Council that apply to the land subject to this Certificate

8. Land reserved for acquisition

State Environmental Planning Policy (Western Sydney Parklands) 2009 makes provision for land included on the Land Reservation Acquisition Map to be acquired by a public authority.

9. Contributions plans

Council currently levies contributions under Section 7.11 of the *Environmental Planning & Assessment Act 1979* for facilities and services. The further development of the subject land may incur such contributions.

9a. Biodiversity certified land

The land is not biodiversity certified land as defined by Part 7AA of the *Threatened Species Conservation Act 1995*.

10. Biobanking agreements

The land is not subject to any biobanking agreement under Part 7A of the *Threatened Species Conservation Act 1995*.

11. Bushfire prone land

The Rural Fires and Environmental Assessment Legislation Amendment Act 2002, which came into force on 1 August 2002, introduced development provisions for bush fire prone land as shown on a Bush Fire Prone Land Map. "Bush fire prone land" is land that has been designated by the Commissioner of the NSW Rural Fire Service as being bush fire prone due to characteristics of vegetation and topography. The land the subject of this certificate has been identified on Council's Bush Fire Prone Land Map as being:

Clear of any bush fire prone land

On land that is bush fire prone, certain development may require further consideration under Section 4.14 or Section 4.46 of the *Environmental Planning & Assessment Act 1979* and under Section 100B of the *Rural Fires Act 1997*.

12. Property vegetation plans

The subject land is not affected by a property vegetation plan under the *Native Vegetation Act 2003*. The Blacktown local government area is excluded from the operation of the *Native Vegetation Act 2003* (refer Schedule 1 Part 3 of that Act).

13. Orders under *Trees (Disputes Between Neighbours) Act 2006*

No. Council has not been notified of any order made under the *Trees (Disputes Between Neighbours) Act 2006* in relation to the subject land.

14. Site compatibility certificates and conditions for seniors housing

Land to which this Certificate applies is not subject to the above.

15. Site compatibility certificates for infrastructure

Land to which this Certificate applies is not subject to the above.

16. Site compatibility certificates and conditions for affordable rental housing

Land to which this Certificate applies is not subject to the above.

17. Paper subdivision information

Not applicable

18. Site verification certificates

Council is not aware of any site verification certificate applying to the subject land.

Under the *Contaminated Land Management Act 1997* and *Contaminated Land Management Amendment Act 2008*

(a) The land to which this certificate relates has not been declared to be significantly contaminated land at the date when the certificate was issued

(b) The land to which the certificate relates is not subject to a management order at the date when the certificate was issued

(c) The land to which this certificate relates is not the subject of an approved voluntary management proposal at the date when the certificate was issued

(d) The land to which this certificate relates is not subject to an ongoing maintenance order as at the date when the certificate was issued

(e) The land to which this certificate relates is not the subject of a site audit statement provided to the Council.

19. Affected building notices and building product rectification orders

19.1 Affected building notices

Council is not aware of any affected building notice in force for the subject land.

19.2 Building product rectification orders

(a) Council is not aware of any building product rectification order in force for the subject land.

(b) Council is not aware of any notice of intention to make a building product rectification order being given for the subject land.

Section 10.7(5)

The following information is provided under Section 10.7(5) of the *Environmental Planning & Assessment Act 1979*. As per section 10.7(6) of the Act, Council shall not incur any liability in respect of any advice provided in good faith under section 10.7(5). The absence of any reference to any matter affecting the land shall not imply that the land is not affected by any matter not referred to in this Certificate.

Planning Instruments and Covenants

The provisions of any covenant, agreement or instrument applying to this land that restrict or prohibit certain development may be inconsistent with the provisions of an environmental planning instrument. In such cases, the provisions of any such covenant, agreement or instrument may be overridden.

Loose-filled Asbestos Insulation

Some residential homes located in the Blacktown Local Government Area may potentially contain loose-fill asbestos insulation, for example in the roof space. NSW Fair Trading maintains a Register of homes that are affected by loose-fill asbestos insulation.

You should make your own enquiries as to the age of the buildings on the land to which this certificate relates and, if it contains a building constructed prior to 1980, the council strongly recommends that any potential purchaser obtain advice from a licensed asbestos assessor to determine whether loose-fill asbestos is present in any building on the land and, if so, the health risks (if any) this may pose for the building's occupants.

Contact NSW Fair Trading for further information

Biodiversity and Threatened Species Conservation

The land is affected by a tree preservation control under Clause 5.9 of the Blacktown Local Environmental Plan 2015. A person shall not ringbark, cut down, lop, top, remove, injure or wilfully destroy any tree, or cause any tree to be ringbarked, cut down, topped, lopped, injured or wilfully destroyed, except with the consent of the Council.

The provisions of any covenant, agreement or instrument applying to this land purporting to restrict or prohibit certain development may be inconsistent with the provisions of a Regional Environmental Plan, State Environmental Planning Policy or Blacktown Local Environmental Plan 2015, in which case the provisions of any such covenant, agreement or instrument may be overridden.

The *Threatened Species Conservation Act 1995* provides for the conservation of threatened species, populations and ecological communities of animals and plants.

The *Threatened Species Conservation Act 1995* amended the *Environmental Planning and Assessment Act 1979* to require, amongst other things, that:

(a) A critical habitat (as defined in the *Threatened Species Conservation Act 1995*) be identified in environmental planning instruments, and

(b) Consent authorities and determining authorities must, when considering proposed development or an activity, assess whether it is likely to significantly affect threatened species, populations and ecological communities, or their habitats, and, if a significant effect is likely, to require the preparation of a species impact statement in accordance with the requirements of the *Threatened Species Conservation Act 1995*, and

(c) Consent authorities and determining authorities must, when considering proposed development or an activity, have regard to the relevant recovery plans and threat abatement plans.

The *Environment Protection and Biodiversity Conservation Act 1999* provides protection for items of national significance. Items of national environmental significance include nationally threatened animal and plant species and ecological communities.

The Act requires a separate Commonwealth approval to be obtained where an action is likely to have significant impacts on items of national environmental significance.

For further information on this matter, please contact the Australian Government's Department of the Environment.

Attachment 1 – State Environmental Planning Policies

In addition to the principal environmental planning instrument identified in section 2.1 of this Certificate, the following State Environmental Planning Policies may also affect development on the subject land.

SEPP (Affordable Rental Housing) 2009

This policy aims to facilitate the increased supply and diversity of affordable rental and social housing in NSW and covers housing types including in-fill affordable housing, along with secondary dwellings (granny flats), boarding houses, group homes, social housing and supportive accommodation. Part 3 of the policy provides for the retention of existing affordable rental housing stock. Development applications to demolish, alter or add, change the use of, or strata subdivide existing low cost rental dwellings may require a contribution towards the provision of alternative affordable housing.

SEPP (Building Sustainability Index: BASIX) 2004

This policy aims to ensure consistency in the implementation of the BASIX scheme throughout the State by overriding provisions of other environmental planning instruments and development control plans that would otherwise add to, subtract from or modify any obligations arising under the BASIX scheme.

SEPP (Exempt and Complying Development Codes) 2008

This policy is also known as the Codes SEPP and includes a number of Codes that allow for certain types of development to be undertaken without the need for council approval as either Exempt Development or approved under a fast track system known as Complying Development, if the relevant standards are met.

SEPP (Sydney Region Growth Centres) 2006

This policy provides for the coordinated release of land for residential, employment and other urban development in the North West Growth Centre, the South West Growth Centre and the Wilton Growth Area. It provides development controls to enable the establishment of vibrant, sustainable and liveable neighbourhoods that provide for community well-being and high quality local amenity.

SEPP (Housing for Seniors or People with a Disability) 2004

This policy is also known as Seniors Housing SEPP and encourages the development of high quality and well-designed housing for older people and people with disabilities, while ensuring that it is in keeping with neighbourhood character. In October 2018, an amendment was made to change some rules for site compatibility certificates and to make the relevant planning panel the determining authority for site compatibility certificates issued under the Seniors Housing SEPP.

SEPP (Infrastructure) 2007

This policy assists the NSW Government, private infrastructure providers, local councils and the communities they support by simplifying the process for providing infrastructure like hospitals, roads, railways, emergency services, water supply and electricity delivery, while ensuring appropriate levels of environmental assessment and consultation are undertaken. Recent changes introduce new provisions for correctional services, emergency and police services facilities and bushfire hazard reduction, ports and roads infrastructure, including facilities for electric vehicles, and other operational and housekeeping improvements.

SEPP (Miscellaneous Consent Provisions) 2007

This policy contains provisions for the erection of temporary structures, subdivision, the demolition of a building or work, certain change of use and fire alarm communication links.

SEPP (State Significant Precincts) 2005

The purpose of this Policy is to facilitate the development, redevelopment or protection of important urban, coastal and regional sites of economic, environmental or social significance to the State so as to facilitate the orderly use, development or conservation of those State significant precincts for the benefit of the State. It also aims to facilitate service delivery outcomes for a range of public services and to provide for the development of major sites for a public purpose or redevelopment of major sites no longer appropriate or suitable for public purposes.

SEPP (Mining, Petroleum Production and Extractive Industries) 2007

This policy is also known as the Mining SEPP and governs the way that mining, petroleum production and extractive material resource proposals are assessed and developed in NSW.

SEPP No 1 - Development Standards

This policy provides flexibility in the application of development standards and allows Council to approve a development that does not comply with a development standard where it can be shown that the development standard is unreasonable or unnecessary.

SEPP No 19 - Bushland in Urban Areas

This policy protects and preserves bushland within urban areas because of its natural heritage, its aesthetic value and its value for recreational, educational or scientific purposes. The policy aims to protect bushland areas in public open space zones and reservations and ensures that bushland preservation is given priority when local environmental plans are prepared.

SEPP No 21 - Caravan Parks

This policy applies to development for the purpose of caravan parks and camping grounds. The policy ensures that development consent is required for new caravan parks and camping grounds and for additional long term sites in existing caravan parks. It also requires that development consent be obtained from Council for the subdivision of land for lease purposes under the Local Government Act.

SEPP No. 30 - Intensive Agriculture

Requires development consent for cattle feedlots having a capacity of 50 or more cattle or piggeries having a capacity of 200 or more pigs. The policy sets out information and public notification requirements to ensure there are effective planning control over this export-driven rural industry. The policy does not alter if, and where, such development is permitted, or the functions of the consent authority.

SEPP No. 32 - Urban Consolidation

States the Government's intention to ensure that urban consolidation objectives are met in all urban areas throughout the State. The policy focuses on the redevelopment of urban land that is no longer required for the purpose it is currently zoned or used, and encourages local councils to pursue their own urban consolidation strategies to help implement the aims and objectives of the policy. Councils will continue to be responsible for the majority of rezonings. The policy sets out guidelines for the Minister to follow when considering whether to initiate a regional environmental plan (REP) to make particular sites available for consolidated urban redevelopment. Where a site is rezoned by an REP, the Minister will be the consent authority.

SEPP No 33 - Hazardous and Offensive Development

This policy applies to development defined as ‘potentially hazardous industry’ or ‘potentially offensive industry’. The policy ensures that in determining whether a development is a hazardous or offensive industry, any measures proposed to be employed to reduce the impact of the development are taken into account.

SEPP No 55 - Remediation of Land

This policy promotes the remediation of contaminated land for the purpose of reducing risk of harm to human health. The policy includes considerations that are relevant in rezoning land and in determining development applications where remediation of land is required.

SEPP No. 62 - Sustainable Aquaculture

Encourages the sustainable expansion of the industry in NSW. The policy implements the regional strategies already developed by creating a simple approach to identity and categorise aquaculture development on the basis of its potential environmental impact. The SEPP also identifies aquaculture development as a designated development only where

there are potential environmental risks.

SEPP No 64 - Advertising and Signage

This policy sets out planning controls for advertising and signage in NSW and requires signage to be compatible with the future character of an area, provide effective communication in suitable locations and be of high quality design and finish. The policy also bans advertisements on parked trailers on roads, road shoulders, footpaths and nature strips, excluding advertising associated with the primary use of the trailer.

SEPP No 65 - Design Quality of Residential Apartment Development

This policy aims to improve the design quality of residential apartment development through the application of 9 design quality principles. The policy also provides requirements for a constituted design review panel to provide independent expert advice to council on the merit of residential flat developments. A design review panel is not mandatory.

Sydney Regional Environmental Plan No 30 - St Marys

This plan provides the planning framework for the planning and development of land known as Australian Defence Industries (ADI) site at St Marys.

SEPP (Western Sydney Employment Area) 2009

This policy aims to protect and enhance land in the Western Sydney Employment Area for employment purposes and to promote economic development and the creations of employment opportunities in Western Sydney. The policy provides for a coordinated approach to the planning, development and rezoning of land within the Western Sydney Employment Area and includes controls to ensure that development occurs in a logical, environmentally sensitive and cost-effective manner.

SEPP (Western Sydney Parklands) 2009

This policy provides the framework to enable the Western Sydney Parklands Trust to develop the Western Parklands into a multi-use urban parkland to meet a range of community needs and interests, including those that promote health and well-being in the community for Western Sydney.

SEPP (Western Sydney Recreation Area)
This policy enables development to be carried out for recreational, sporting and cultural purposes within the Western Sydney Recreation Area, including the development of a recreation area of state significance.

Authorised by Blacktown City Council
Proforma ID: 744172

End of Certificate

NSW GOVERNMENT | SafeWork NSW

RECEIVED
26 FEB 2020
BY: .....

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

Our Ref: D20/074215

21 February 2020

Ms Celine Li
Douglas Partners
96 Hermitage Rd
WEST RYDE NSW 2114

Dear Ms Li

RE SITE: 339 Wallgrove Rd, Eastern Creek NSW 2766

I refer to your site search request received by SafeWork NSW on 3 February 2020 requesting information on Storage of Hazardous Chemicals for the above site.

Enclosed are copies of the documents that SafeWork NSW holds on record number 35/036689 and 35/035772 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

SAFEWORK NSW
92 DONNISON STREET
GOSFORD NSW 2250

EFTP
SAFE 10/02/20 13:03
92 T 000030#0553 0008
GOSF
Aust MARK

TIMI
MID OTHER* $30Y.50
TSP OTHER* $1.36
RRN INV ITL $310.86
CARD $28.26
AUTH 6551

MOT
UK CARD
$310.86

* indicates taxable
TAX INVOICE
81 913 830 179

Nature of your primary business activity

WASTE DISPOSAL & RECYCLING

ABN of occupier (if any)

56784733957

Website details (if any)

What is the ANSZIC code most applicable to your business (see GDG01 guide for list of codes and further information)

Code	Description
670	(STORAGE) WASTE DISPOSAL & PROCESSING

SITE DETAILS

Is the site staffed? If yes, state number of employees 35

Site staffing: Hours per day UP TO 11 **Days per week** 7

Site emergency contact

Name

CHRIS NORTHEY

Phone number

( ) 0419 753 012

Attach an A4 size site sketch(s) of the premises. Refer to the Guide for information on the requirements for the site sketch(s).

Attach a photocopy page from a local street directory or other map showing the locality of the premises. Mark the location of the premises with an X.

DANGEROUS GOODS STORAGE DETAILS

List all the **changes** to storage locations of dangerous goods and processes on these premises. Copy this page and attach additional sheets if there is insufficient space.

Identifier	Type of storage location or process	Class	Maximum storage capacity (L, kg)

How has this storage location changed?

Storage location has been moved ☐ Attach a new site sketch or sketches showing current storage locations

New storage location ☐ Complete the table below and attach a new site sketch

Change of dangerous goods stored ☐ Comple the table below or tick here if the storage location is now empty ☐

UN Number	Proper shipping name	Class	PG (I, II, III)	Product or common name	HazChem symbol	Typical qty	Unit eg L, kg

AMENDMENT TO NOTIFICATION OF DANGEROUS GOODS ON PREMISES – NO FEE REQUIRED

FDGA01

Existing Licence Number or Acknowledgement Number 35/ 035772

Expiry Date 15/12/2011 Note: This must be current. Otherwise complete FDG01

Attach a copy of the WorkCover acknowledgment of notification

What type of amendment is required?

If you tick more than one box make sure you complete all relevant sections of the form.

Ensure you complete the last page and it is signed and dated.

Change in occupier Yes ☑ No ☐
If yes complete occupier and contact details

Changes in contact details Yes ☑ No ☐
If yes complete contact details

Changes in site storage or handling arrangements Yes ☐ No ☐
If yes complete the site details

Changes in dangerous goods stored or handled Yes ☐ No ☐
(including where dangerous goods are no longer stored)
If yes complete the dangerous goods storage details

CONTACT DETAILS

Title: Mr / Miss / Ms / Mrs / Other (please specify) MR **Family name** NORTHEY

Given name CHRIS **Other names**

Gender (Male) / Female (please circle) **Date of birth** ____/____/____ **Place of birth**

Postal address 10 VALENTINE AVE

Suburb PARRAMATTA **State** NSW **Postcode** 2150

Business phone 0419 753 012 **Business fax number** 9687 6670

Business email address

OCCUPIER DETAILS

Name of previous occupier

WSN ENVIRONMENTAL SOLUTIONS

Name of new occupier

WASTE ASSETS MANAGEMENT CORPORATION

Postal address of occupier

10 VALENTINE AVE

Suburb/Town PARRAMATTA NSW **Postcode** 2150

Trading name if different

Type of business entity

Company ☐ Sole trader ☐ Partnership ☐ Other ☑ please specify: STATE-OWNED CORP

Roadway

4 metres

Perimeter Fence

6 metres

Safety
Eyewash and
Shower

1 m

Fire
Extinguisher

Depot 1

1 m

13000L
Storage Tank

1 m

Sodium Hydroxide Solution
Class 8

2 metres

Sequencing Batch
Reactor

2 metres

Air Blowers

Fire Hose

List the dangerous goods that will be stored and/or processed on these premises (refer to Guide GDG01). Copy this page and attach additional sheets if there is insufficient space.

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)
DEPOT 1	ABOVE GROUND TANK	8	13,000 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg
1823	SODIUM HYDROXIDE	8	II	CAUSTIC SODA	2R	13,000	L
	SOLUTION						

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

Licence No. 35/035772

APPLICATION FOR RENEWAL
OF LICENCE TO KEEP DANGEROUS GOODS

ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOODS ACT, 1975 AND REGULATION THEREUNDER

DECLARATION: Please renew licence number 35/035772 to 24/01/2005 . I confirm that all the licence details shown below are correct (amend if necessary).

..... BRIAN BARTON ..... 23/12/03 .....

(Signature) *(Please print name)* *(Date signed)*

for: WASTE RECYCLING & PROCESSING SERVICE OF NSW

*THIS **SIGNED** DECLARATION SHOULD BE **RETURNED TO:***

WorkCover New South Wales
Dangerous Goods Licensing Section
LOCKED BAG 2906
LISAROW NSW 2252

Enquiries:ph (02) 43215500
fax (02) 92875500

Details of licence on 19 December 2003

Licence Number 35/035772 **Expiry Date** 24/01/2004

Licensee WASTE RECYCLING & PROCESSING SERVICE OF NSW
WASTE SERVICE NSW

Postal Address: WASTE SERVICE NSW LOCKED BAG 7699 CHATSWOOD DC NSW 2067

Licensee Contact BRIAN BARTON Ph. 9934 7000 Fax. 9934 7185

Premises Licensed to Keep Dangerous Goods
WASTE RECYCLING & PROCESSING SERVICE OF NSW WASTE SERVICE NSW
WALLGROVE RD EASTERN CREEK 2766

Nature of Site WASTE DISPOSAL SERVICES

Major Supplier of Dangerous Goods UNKNOWN OR OTHER

Emergency Contact for this Site ~~BRIAN BARTON Ph. 0419 753 985~~ RICHARD CARLYLE 0419 753 942

Site staffing 14 HRS 7 DAYS

Details of Depots

Depot No.	Depot Type	Goods Stored in Depot	Qty
1	ABOVE-GROUND TANK	Class 8	1000 L
	UN 1791 HYPOCHLORITE SOLUTION		1000 L

RECEIVED
SERVICE CENTRE
31 DEC 2003
WORKCOVER
NEW SOUTH WALES

What is a depot? See page 5 of the Guidance Notes.

PART C – Dangerous Goods Storage *Complete one section per depot.*

If you have more depots than the space provided, photocopy sufficient sheets first.

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity
1	ABOVE GROUND TANK	8	1200L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or common name	Typical quantity	Unit, e.g. L, kg, m³
1791	HYPOCHLORITE SOLUTION	8	III	NALCO 3935	1000	L

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, e.g. L, kg, m³

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity

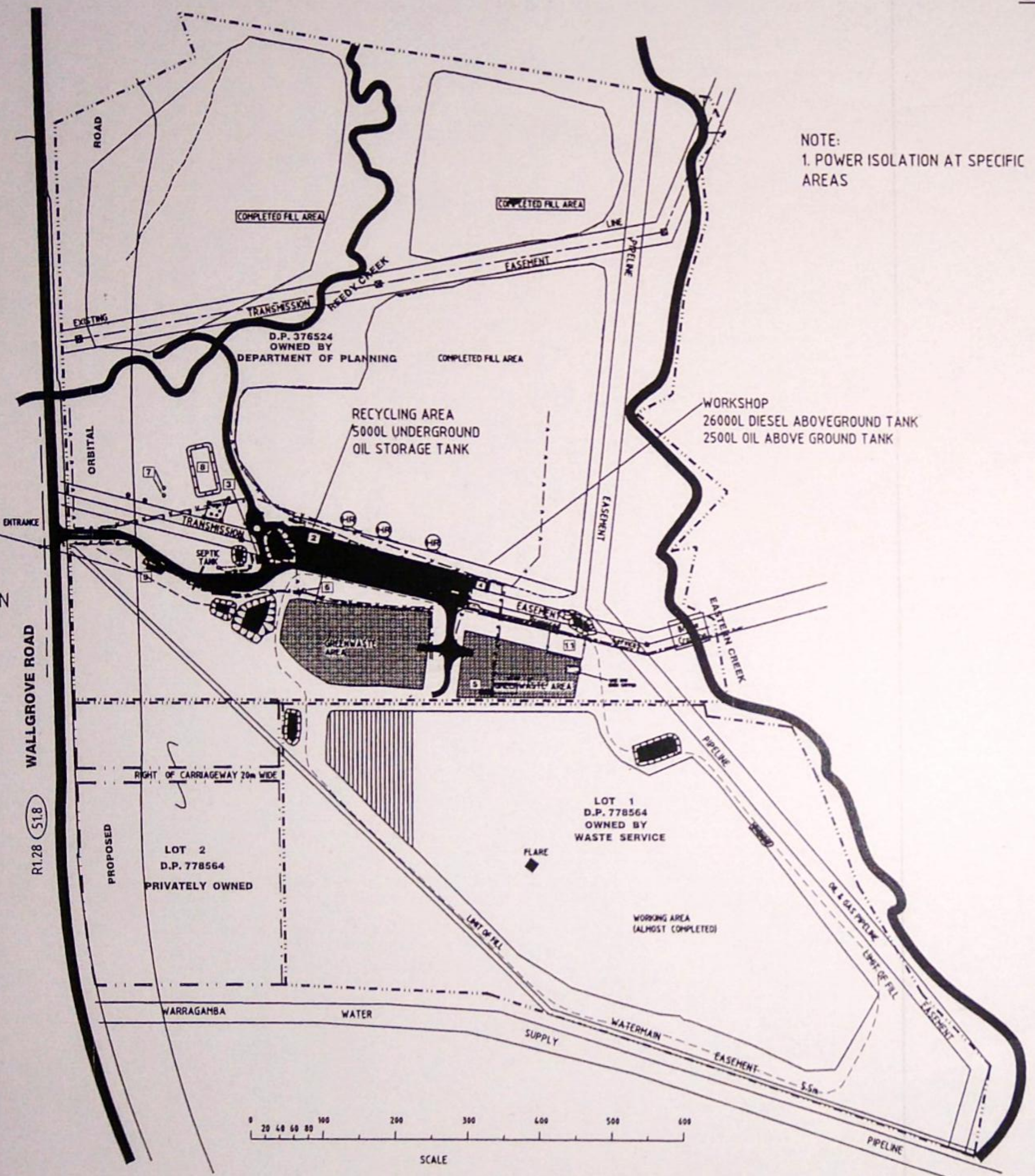
UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or common name	Typical quantity	Unit, e.g. L, kg, m³

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, e.g. L, kg, m³

35/035772

OT 1
L ABOVE GROUND
K
/PGIII/UN 1791
OCHLORITE SOLUTION



NOTE:
1. POWER ISOLATION AT SPECIFIC AREAS

WORKSHOP
26000L DIESEL ABOVEGROUND TANK
2500L OIL ABOVE GROUND TANK

LEGEND:-

ROADS

STRUCTURES

EASEMENTS

SERVICE LINES

EASEMENTS
- POWER
- WATER
- TELEPHONE
- SPRAY IRRIGATION LINE
- SEWER

HR Fire Hose Reel

DAMS

EXISTING DEVELOPMENTS

1. WEIGHBRIDGE
2. RECYCLING BUILDING
3. SITE OFFICE
4. WORKSHOP
5. STATIC PILE COMPOST FACILITY
6. G.W RUNOFF TANK
7. WEATHER STATION
8. EDL SITE (55m x 112m)
9. WHEEL WASH
11. CONSTRUCTION COMPOUND AND FLARE STATION

AREAS FILLED TO DESIGN

LIMITS OF FILL AREA

CREEKS

BOUNDARIES
- PRIVATELY OWNED
- WASTE SERVICE
- DEPARTMENT OF PLANNING

WASTE SERVICES WALLGROVE ROAD, EASTERN CREEK, NSW 2766		
LICENCE NO: NEW LICENCE		
SCID SKETCH FOR EASTERN CREEK SITE		
DATE: 20/1/03	DRAWN:L.Evans	Drawing No: 22032ES

PREPARED BY: Environmental Audits of Australia Pty Ltd
Telephone: (02) 9635 5099 Facsimile: (02) 9689 1385

Application for Licence to Keep Dangerous Goods

WorkCover NEW SOUTH WALES

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 | ACN

WASTE RECYCLING AND PROCESSING CORPORATION | 93 524 709 106

2 Postal address of applicant | Suburb/Town | Postcode

LOCKED BAG 7699 | CHATSWOOD DC | 2067

3 Trading name or site occupier's name

WASTE SERVICE NSW

4 Contact for licence inquiries

Phone | Fax | Name

02 9934 7000 | 9934 7185 | BRIAN BARTON

5 Previous licence number (if known) 35/035772

6 Previous occupier (if known)

7 Site to be licensed

No | Street

WALLGROVE RD.

Suburb / Town | Postcode

EASTERN CREEK | 2766

8 Main business of site WASTE RECEIVAL

9 Site staffing: Hours per day 14 Days per week 7

10 Site emergency contact

Phone | Name

0419 753 985 | BRIAN BARTON

11 Major supplier of dangerous goods NALCO CHEMICALS

12 If a new site or for amendments to depots – see page 4 of Guidance Notes.

Plan stamped by: Name of Accredited Consultant | Date stamped

DICK BENBOW | 16th January 2003

WORKCOVER NSW
RECEIVED
14 JAN 2003
DANGEROUS GOODS

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 | Date

BRIAN BARTON | 26/1/02

Please send your application, marked *CONFIDENTIAL*, to: **Dangerous Goods Licensing, WorkCover NSW, Level 3, GPO Box 5364, SYDNEY NSW 2001**

CONTACT FOR NOTIFICATION INQUIRIES

Title: (Mr) / Miss / Ms / Mrs / Other (please specify) MR **Family name** BEER

Given name LAURENCE **Other names** KEITH

Business phone 02 96773103 **Business fax number** 0296773199

Business email address laurie.beer@globalrenewables.com

Previous Licence Number or Acknowledgement Number (if known)

35/ 036689

Previous Occupier (if known)

Eastern Creek Operations

Site on which dangerous goods are to be kept

Number: – Street: Wallgrove Rd NSW

Suburb/Town/Locality: Eastern Creek NSW Postcode: 2164

Nearest cross Street

Old Wallgrove Rd

Lot and DP if no street number

Is the site staffed? If yes state number of employees 85

Site staffing: Hours per day 24 Days per week 5

Site Emergency Contact

Phone number (02) 9677 3103 Name LAURIE BEER

Nature of site (eg petrol station, warehouse etc)

Recycling Process - Waste Management

Nature of primary business activity

Recycling

ABN Number (if any) 87105104087 Website details (if any) www.GRD.com.au

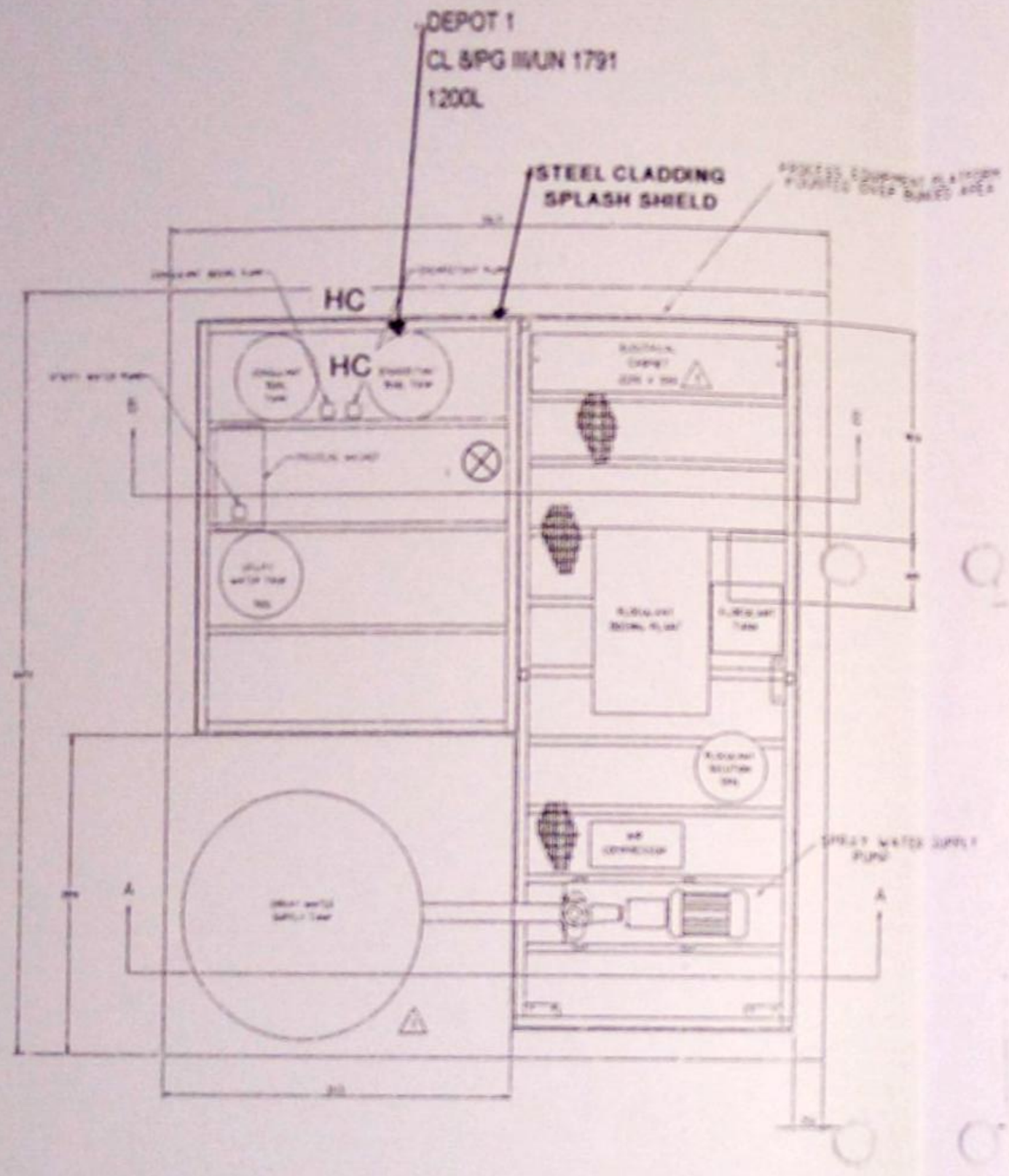
What is the ANSZIC code most applicable to your business? (see guide for list of codes and further information)

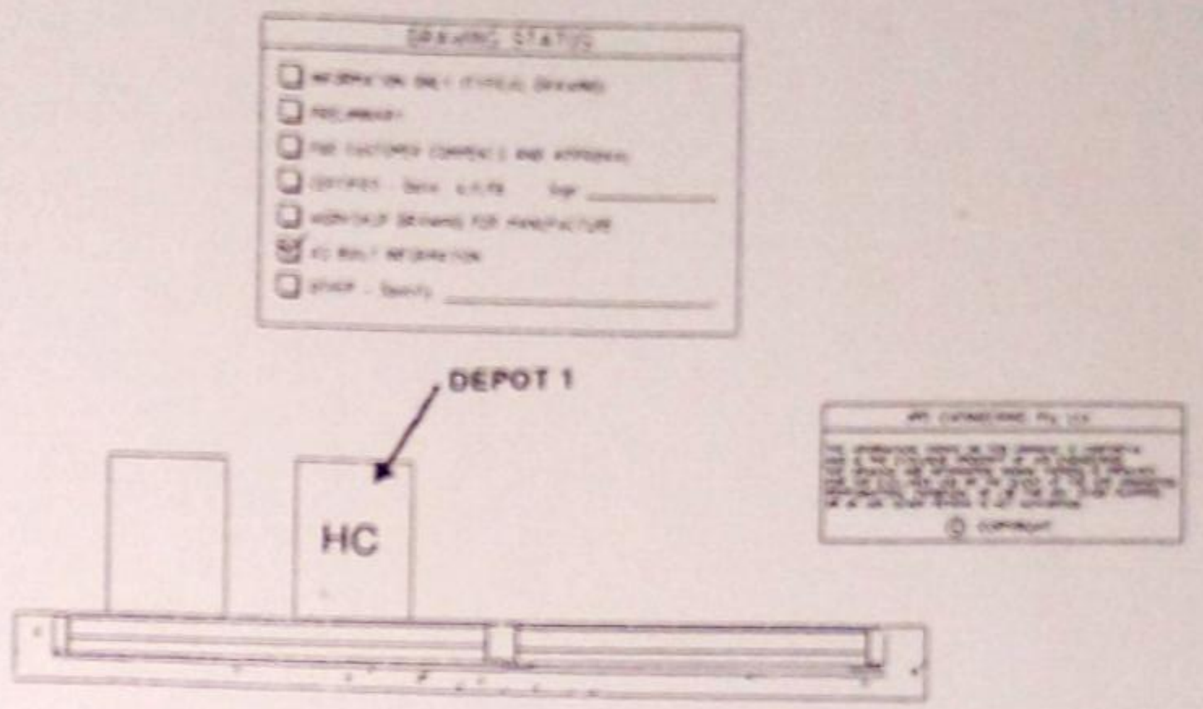
Code 294 Description Waste Recycling

Attach a site sketch(s) of the premises. Refer to the Guide GDG01 for information on the requirements for the site sketch.

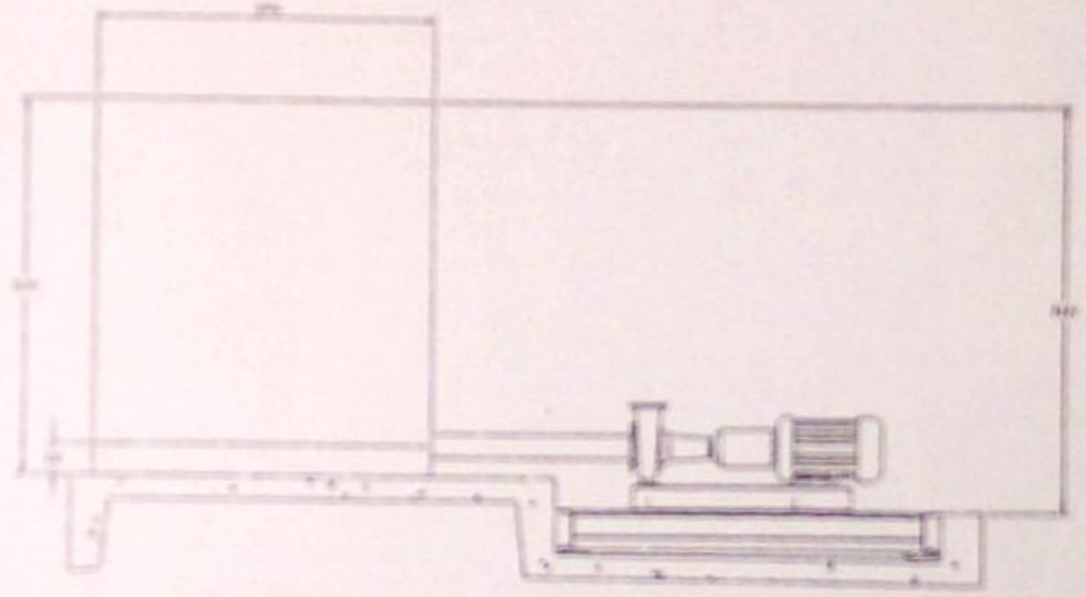
Attach a legible photocopy page from a local Street Directory or other map showing the locality of the premises. Mark the location of the premises with an X.

0000304107 0005 12/06/09 CR CARD $100.00





SECTION B-B



SECTION A-A

LEGEND:

⊗ FIRE EXTINGUISHER

HC HAZCHEM DIAMOND SIGN

Depot (Title) 1-aboveground tank
for (Quantity) 1000L
of DG Class 8 and PG III
as shown in this plan
conforms with the Dangerous Goods Act 1975
and Australian Standard(s) AS 3780, 1994
Signature: R T Benbow Date 16/1/03
Name (printed): R T BENBOW

NOTES:

1. SAFETY SHOWER ON PLATFORM
2. BUNDING = 110% OF ABOVEGROUND TANK i.e DEPOT 1 – approx 6000L
3. NO INCOMPATIBLE CHEMICALS
4. NO OTHER DEPOTS ONSITE
5. NO PROTECTED WORKS WITHIN 50M
6. NEAREST OSF >20M
7. NEAREST BOUNDARY >10M

REV	ITEM	CHANGE	NAME	APP	DATE
2		TANK PLAN & TYPE			
1		UNBOLTED SET & ELECTRICAL CABINET			
0		PRELIMINARY			

JPG ENGINEERING

WASTE SERVICE NSW

WHEEL WASH &
WATER TREATMENT FACILITY
PROGRAM AND LAYOUT
EASTERN CREEK

Break-Glass Locations

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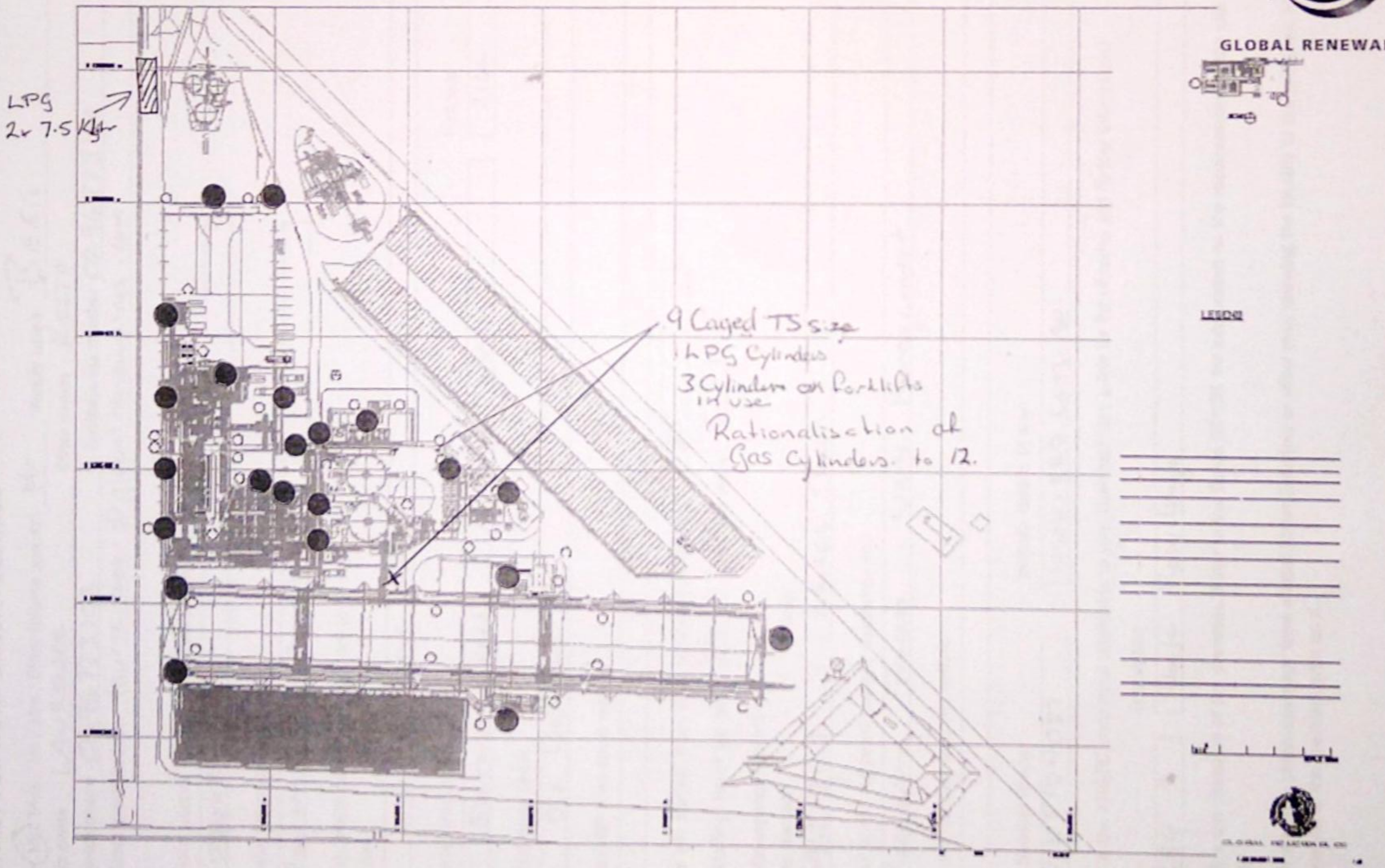

List the dangerous goods that will be stored and/or processed on these premises (refer to Guide GDG01). Copy this page and attach additional sheets if there is insufficient space.

Above Ground Tank

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)
1	LPG Liquid Petroleum Gas Front Gate.	2.1	2 x 7.5 kl ~~7500L~~ 15000L

Spoke to Lorry 11/6

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg
1075	Liquid Petroleum Gas	2.1	N/A	L.P.G.	2WE	~~15L~~ 15000	~~7.5kl~~ L

Above Ground Tank

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)
~~1075~~2	"Blood Alley" Rationisation of amount stored on site 2003	2.1	12 x 36 Ltr. 432L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg
1075	Liquid Petroleum Gas	2.1	NA	LPG	2WE	216 Ltr	36 Ltr

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

NOTIFICATION OF DANGEROUS GOODS ON PREMISES FORM

FDG01

List the dangerous goods that will be stored and/or processed on these premises (refer to Guide GDG01). Copy this page and attach additional sheets if there is insufficient space.

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)
1	Diesel Tanks	3	2x 2.254 kl

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg
	Premium Diesel	3		Diesel			

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)
2	Front GATE		2x 7.5 kl

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg
1075	Liquid Petroleum Gas	2.1	N/A	LPG.	2WE		

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)
3	LABORATRY		

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg
N/A	Hydrogen						
N/A	CO in Methane						

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)
4	Maintenance		

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg
N/A	Argon						
N/A	Oxygen						
N/A	Acetylene						
1075	LPG	2.1	N/A	LPG.	2WE	30	36 kgs

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

CONTACT FOR NOTIFICATION INQUIRIES

Title (Mr) / Miss / Ms / Mrs / Other (please specify) Mr **Family name** BEER

Given name LAURENCE **Other names** KEITH

Business phone 0296773103 **Business fax number** 0296773199

Business email address laurie.beer@globalrenewables.com

Previous Licence Number or Acknowledgement Number (if known)

35/ 036689

Previous Occupier (if known)

Eastern Creek Operations

Site on which dangerous goods are to be kept

Number — Street Wallgrove Rd.

Suburb/Town/Locality Eastern Creek NSW Postcode 2164

Nearest cross Street

Old Wallgrove Rd

Lot and DP if no street number

Is the site staffed? If yes state number of employees 85.

Site staffing: Hours per day 24 Days per week 6

Site Emergency Contact

Phone number 0296773103 **Name** LAURIE BEER

Nature of site (eg petrol station, warehouse etc)

Recycling Process - Waste Management

Nature of primary business activity

ABN Number (if any) 87105104087 Website details (if any) www.GRD.COM.AU.

What is the ANSZIC code most applicable to your business? (see guide for list of codes and further information)

Code 294 Description Waste Recyclings

Attach a site sketch(s) of the premises. Refer to the Guide GDG01 for information on the requirements for the site sketch.

Attach a legible photocopy page from a local Street Directory or other map showing the locality of the premises. Mark the location of the premises with an X.

Break-Glass Locations

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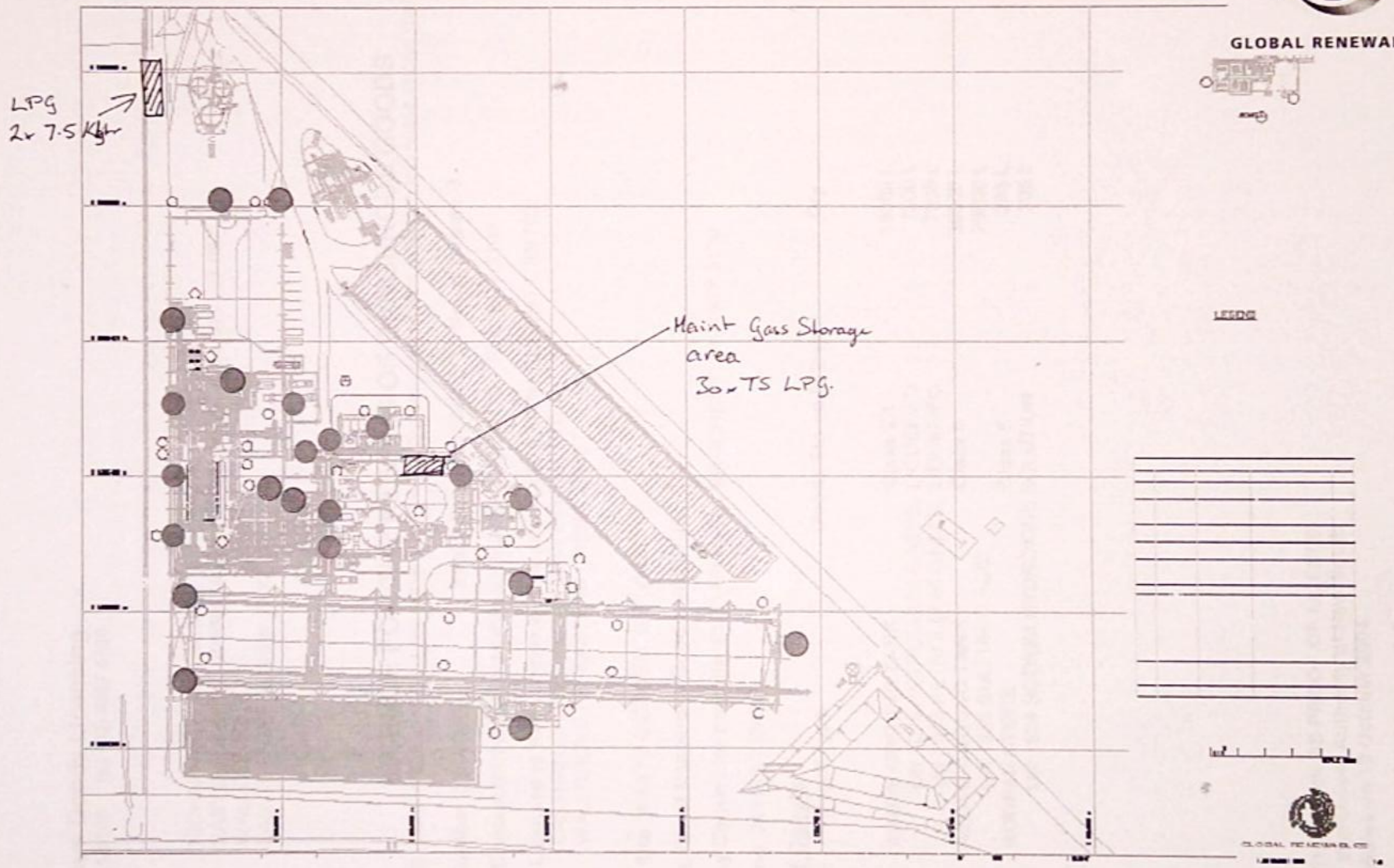

UR – "Responsible" -------- UR - "Safe"

WorkCover NEW SOUTH WALES

Dangerous Goods Licensing
ph (02) 4321 5500 fax (02) 9287 5500

Attn: RICHARD MANDER-JONES
Licensee: **EASTERN CREEK OPERATIONS PTY LIMITED** ACN 105 104 087
WALLGROVE RD
EASTERN CREEK NSW 2766

LICENCE FOR THE KEEPING OF DANGEROUS GOODS

ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOODS ACT, 1975 AND REGULATIONS THEREUNDER

Licence Number 35/036689 **Expiry Date** 25/06/2005 **No. of Depots** 3

Licensee Contact RICHARD MANDER-JONES Ph. 9677 3120 Fax. 9677 3199

Premises Licensed to Keep Dangerous Goods WASTE MANAGEMENT CENTRE
EASTERN CREEK OPERATIONS PTY LIMITED
WALLGROVE RD EASTERN CREEK 2766

Nature of Site WASTE DISPOSAL SERVICES

Major Supplier of Dangerous Goods VARIOUS

Emergency Contact for this Site RICHARD MANDER-JONESV Ph. 9677 3120

Site staffing 24 HRS 7 DAYS

Details of Depots

Depot No.	Depot Type	Goods Stored in Depot	Qty
1	ABOVE-GROUND TANK	Class 2.1	15000 L
	UN 1075 PETROLEUM GASES,	LIQUEFIED	7500 L
	UN 1075 PETROLEUM GASES,	LIQUEFIED	7500 L
2	ABOVE-GROUND TANK	Class 8	30000 L
	UN 1830 SULFURIC ACID		20000 L
3	ROOFED STORE	Class 8	205 L
	UN 1824 SODIUM HYDROXIDE SOLUTION		205 L

PLEASE RETAIN AS PROOF OF LICENCE
Issued by Workcover Authority of New South Wales on 19 October 2004

WorkCover. **Watching out for you.**

Site Sketch

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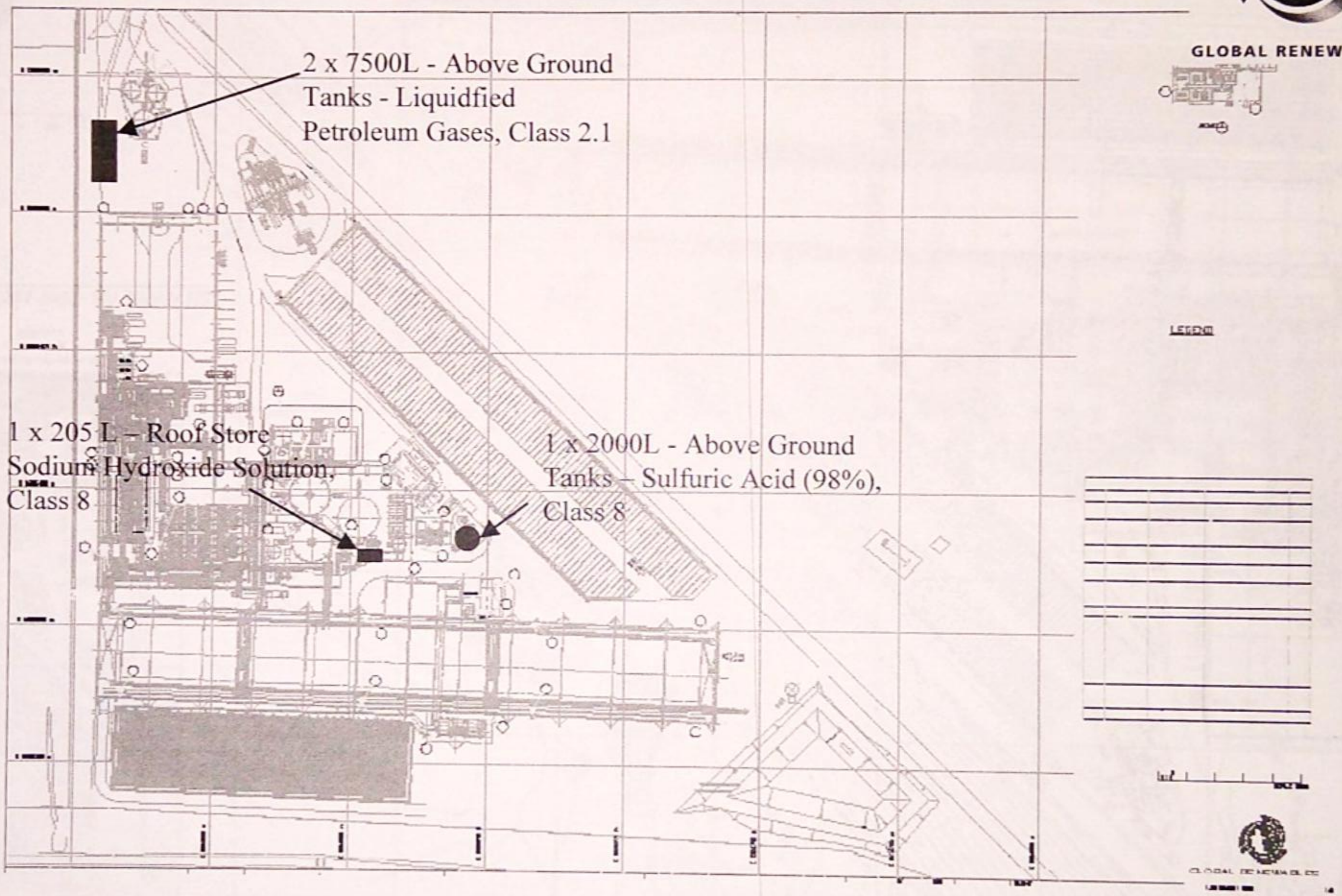

UR – "Responsible" -------- UR - "Safe"

35/036689

FOR CONTINUATION SEE INSET "A"

DEPOT 1.

FIRE WATER TANKS

RAIN WATER TANK

FUEL TANKS

RECEIVAL BUILDING

PRODUCTS

PRIMARY REFINING

DIGESTER AREA

COMPOSTING BUILDING

DEPOT 2

DEPOT 3

FIRST FLUSH WATER DAM

SEWAGE TREATMENT

FOR CONTINUATION SEE ABOVE LEFT

INSET "A"

SCALE 1:1000

SEE REVERSE FOR DEPOT CERTIFICATION

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GREC PTY LIMITED

EASTERN CREEK UR-3R FACILITY

PLANT LAYOUT

50766-00/G-701

B1

GRDMinproc

DRAWING No. REFERENCE DRAWINGS

03bb89

Appendix D

Quality Assurance and Quality Control Procedures

Calibration Certificates

DATA QUALITY ASSESSMENT

Q1. Data Quality Objectives

The Due Diligence Investigation was prepared with reference to the seven step data quality objective (DQO) process which is provided in Appendix B, Schedule B2 of the *National Environment Protection (Assessment of Site Contamination) Measure* 1999 as amended 2013 (NEPC, 2013). The DQO process is outlined as follows:

- Stating the Problem;
- Identifying the Decision;
- Identifying Inputs to the Decision;
- Defining the Boundary of the Assessment;
- Developing a Decision Rule;
- Specifying Acceptable Limits on Decision Errors; and
- Optimising the Design for Obtaining Data.

The DQOs have been addressed within the report as shown in Table Q1 and outlined below.

Table Q1: Data Quality Objectives

Data Quality Objective	Report Section where Addressed
State the Problem	S1 Introduction
Identify the Decision	S1 Introduction (objective) S13 Conclusion and Recommendations
Identify Inputs to the Decision	S1 Introduction S2 Scope of Works S3 Site Information S8 Site Assessment Criteria S9 Field Work Observations S10 Analytical Results Summary S11 Analysis and Discussion of Results
Define the Boundary of the Assessment	S3 Site Identification and Description Drawing 1 - Appendix A
Develop a Decision Rule	S8 Site Assessment Criteria
Specify Acceptable Limits on Decision Errors	S7 Fieldwork and Analysis S8 Site Assessment Criteria QA/QC Procedures and Results – Sections Q2, Q3
Optimise the Design for Obtaining Data	S2 Scope of Works S7 Fieldwork and Analysis QA/QC Procedures and Results – Sections Q2, Q3

The Detailed Site Investigation (DSI) was prepared with reference to the seven step data quality objective (DQO) process which is provided in Appendix B, Schedule B2 of the *National Environment Protection (Assessment of Site Contamination) Measure* 1999 as amended 2013 (NEPC, 2013). The DQO process is outlined as follows:

(1) State the Problem

The site is proposed to be redeveloped as a proposed waste processing facility with possible incineration capacity. The preliminary conceptual site model (CSM) identified a number of potential contaminant sources and potential complete source-pathway-receptor linkages (refer Report Section 6). The problem to be addressed is whether any complete contamination source-pathway-receptor linkages will exist under the proposed development and whether remediation and/or management is required to break those linkages.

The objective of the DSI was to characterise the nature of contamination, if any, which could present a risk under the proposed land use / development. This has been done through addressing the source-pathway-receptor linkages identified in the CSM with respect to their potential impact on the suitability of the site, from a contamination perspective, for the proposed development.

The site is within the Local Government Area (LGA) of Blacktown Council. The regulatory authority is NSW EPA. The Douglas Partners (DP) project team included Paul Gorman (Project Manager), and Joel James-Hall (Environmental Engineer / Site Supervisor).

The fieldwork for the DSI was constrained by budget (with reference to DP's proposal), and physical access to current building footprints and due to underground and overhead services.

(2) Identify the Decision/Goal of the Study

Based on the CSM it is considered that the contaminants of potential concern are metals, TPH, BTEX, PAH, PCB, OCP/OPP, phenols, landfill gas, VOC and asbestos and the potentially affected media are soil, groundwater and soil vapour. The assessment of soil and groundwater is used to screen the potential for contamination to be present in soil vapour. As such, the analysis focused primarily on these contaminants and media; however, other contaminants have also been addressed for completeness (refer Report Section 6).

The soil analytical data was compared to health and ecological investigation and screening levels for a industrial land use, as discussed in Report Section 8. The groundwater analytical data was compared to the site assessment criteria (SAC) as discussed in Report Section 8.2. The suitability of the site for the proposed development was assessed through the comparison of individual results and, where relevant, the 95% UCL of the mean concentrations.

Other decisions that were addressed by the DSI are as follows:

- What is the updated CSM when incorporating the additional data obtained through the DSI (Report Section 12.2);
- Is the field and laboratory data sufficient to address the objectives of the DSI (Report Section 7)?

- Are additional investigations required to address the DSI objectives, or to determine the need for remediation and/ or management to render the site suitable for the proposed development (Report Section 12 & 13)?
- Are there any off-site migration issues that need to be considered further (Report Section 12)?
- Is the data sufficient to enable the preparation of a Remediation Action Plan (RAP) and/or Environmental Management Plan (EMP) should the data suggest these are required?

(3) Identify Information Inputs

Inputs into the decisions were as follows:

- The preliminary CSM which identified potential contaminant sources, contaminant migration pathways and receptors to site contaminants;
- Site and regional geology, topography and hydrogeology;
- Site observations and screening (i.e. PID) during the fieldwork for the DSI;
- The lithology of the site as described in the field logs;
- Field and laboratory methods and QA/QC data to assess the suitability of the environmental data;
- Analytical results for the contaminants of potential concern (COPC) on fill, natural soil and sediment samples;
- Analytical results for the COPC on groundwater, vapour and surface water samples; and
- Assessment of the analytical data against the SAC discussed in Report Section 8.

(4) Define the Study Boundaries

The site is identified as Lot 1 Deposited Plan 1059698, covers an area of 8.67 hectares and has lateral boundaries as shown on Drawing 1, Appendix A.

The vertical boundary of the DSI is the vertical extent of the bores, being to a maximum of 25 m below ground level (bgl). Soil samples were recovered to a maximum depth of 5.5 m bgl.

The investigation of the site was partially constrained by the presence of inaccessible existing building envelopes.

(5) Develop the Analytical Approach (or decision rule)

The decision rules used in addressing the objective of the DSI were as follows:

- The adopted SAC were the NSW Environment Protection Authority (EPA) endorsed criteria as discussed in Report Section 8. Where such criteria are not available, the laboratory reporting limits and/or other recognised national or international standards were used as screening criteria, as discussed in Report Section 8;

- Laboratory test results for systematic soil samples were assessed individually against the adopted SAC (or statistically, if considered appropriate, to determine the 95% upper confidence level (UCL) of the mean concentration for each analyte or analyte group (of like materials));
- Laboratory test results for targeted soil samples were assessed individually against the adopted SAC;
- Laboratory test results for groundwater samples were assessed individually against the adopted SAC. Furthermore, the assessment of groundwater contamination status considered background / regional quality and potential off-site impacts;
- Exceedance of the SAC or screening criteria triggered a review of the potential risks to human health and the environment, and were a potential unacceptable risk was identified, a recommendation has been made for additional targeted investigation, remediation and/ or management (refer Report Section 12 & 13);
- The QA/QC results were evaluated with respect to the specific limits (their acceptable range, where applicable) as outlined in Sections Q2 and Q3; and
- The usability of the field and laboratory test results were evaluated against the Data Quality Indicators (DQIs) discussed in Section Q3.

(6) Specify the Performance or Acceptable Criteria

Decision errors for the respective COPC are:

- Deciding that the analyte concentration exceeds the SAC when it truly does not;
- Deciding that the analyte concentration is within the SAC when it truly is not;
- Deciding that the site requires remediation when it truly does not; and
- Deciding that the site is suitable for the proposed land use when it truly is not.

Decision errors were minimised by the following:

- Comparison of analytical concentrations with those reported in previous investigations for like media (where available);
- Systematic soil sample numbers comply with those recommended in the NSW EPA *Sampling Design Guidelines* (1995);
- The sampling regime targeted each stratum identified as being potentially impacted by the CSM to account for site variability;
- Sample collection and handling techniques were in accordance with standard industry practice, (refer Report Section 7);
- The analyte selection was based on the CSM. The potential for contaminants other than those analysed was considered to be low;
- Samples were prepared and analysed by NATA-accredited laboratories, with NATA endorsed testing procedures;
- The analytical data was assessed by DP for usability and reliability (refer Section Q2);

- The SAC were adopted from established and NSW EPA endorsed guidelines, which have risk probabilities already incorporated;
- Use of statistical analysis to characterise the significance of minor detected exceedances of the SAC. A significance level of 0.05 was adopted for data with statistical analysis of 95% UCL of average concentrations; and
- Use of risk-based decision making, including development of a CSM, when determining the need for remediation or management of contamination.

(7) Optimise the design for obtaining data

The sampling design and procedures that were implemented to optimise data collection for achieving the DQOs comprised the following:

- The investigation was undertaken by appropriately trained and experienced environmental scientists / engineers;
- The sampling method adopted enabled collection of representative samples;
- NATA accredited laboratories using NATA endorsed methods were used to perform laboratory analysis;
- More soil samples were collected than required for laboratory analysis to allow for screening to determine optimal samples for analysis of volatile contaminants. Soil samples were screened using a calibrated photo-ionisation detector (PID); and
- Samples not initially chosen for analysis were held under appropriate storage conditions pending results of initial analysis to allow laboratory analysis on additional samples if required to further characterise or delineate initial results.

Q2. FIELD AND LABORATORY QUALITY CONTROL

The field and laboratory quality control (QC) procedures and results are summarised in Tables Q2 and Q3. Reference should be made to the fieldwork and analysis procedures in Section 7 and the laboratory results certificates in Appendix H for further details.

Table Q2: Field QC

Item	Frequency	Acceptance Criteria	Achievement
Intra-laboratory replicates	5% primary samples	RPD <30% inorganics), <50% (organics)	Yes[1]
Inter-laboratory replicates	5% primary samples	RPD <30% inorganics), <50% (organics)	Yes[1]
Trip Spikes	1 per field batch	60-140% recovery	Yes[2]
Trip Blanks	1 per field batch	<PQL/LOR	Yes[2]
Rinsates	1 per day	<PQL/LOR	Yes[3]

NOTES: 1 qualitative assessment of RPD results overall; refer Section Q2.3

2 Results reported in Tables QA4 to QA7 and QA11 to 12

3 Results reported in Table G2

Table Q3: Laboratory QC

Item	Frequency	Acceptance Criteria	Achievement
Analytical laboratories used		NATA accreditation	yes
Holding times		In accordance with NEPC (2013) which references various Australian and international standards	yes
Laboratory / Reagent Blanks	1 per lab batch	<PQL	yes
Laboratory duplicates	10% primary samples	Laboratory specific [1]	
Matrix Spikes	1 per lab batch	70-130% recovery (inorganics); 60-140% (organics); 10-140% (SVOC, speciated phenols)	yes
Surrogate Spikes	organics by GC	70-130% recovery (inorganics); 60-140% (organics); 10-140% (SVOC, speciated phenols)	yes
Control Samples	1 per lab batch	70-130% recovery (inorganics); 60-140% (organics); 10-140% (SVOC, speciated phenols)	yes

NOTES: 1 ELS: <10xPQL – any RPD; >10xPQL – 20-50%RPD
ALS: <10xPQL – any RPD; 10-20xPQL – 0-50%RDP; >20xPQL – 0-30%RPD

In summary, the QC data is considered to be of sufficient quality to be acceptable for the assessment.

Q2.1 Intra-Laboratory Replicates

Intra-laboratory replicates were analysed as an internal check of the reproducibility within the primary laboratory ELS and as a measure of consistency of sampling techniques. The comparative results of analysis between original and intra-laboratory replicate samples are summarised in Table QA1 and QA8 for soil replicates, Table QA2 and QA9 for water replicates and Table QA10 for gas samples. A qualitative assessment of the calculated RPDs is provided in Section Q2.3.

Q2.2 Inter-Laboratory Analysis

Inter-laboratory replicates were conducted as a check of the reproducibility of results between the primary laboratory ELS and the secondary laboratory ALS and as a measure of consistency of sampling techniques. The comparative results of analysis between original and inter-laboratory replicate samples are summarised in Table QA3 and QA8. A qualitative assessment of the calculated RPDs is provided in Section Q2.3.

Q2.3 Qualitative assessment of RPD

The calculated RPD values for soil, gas and groundwater samples were within the acceptable range of ± 30 % for inorganic analytes and ± 50% for organics with the with the exception of those in bold in Tables Q1-8.

However the majority of these exceedances are not considered to be significant for the following reasons:

- The typically low actual differences in the concentrations of the replicate pairs where some RPD exceedances occurred. High RPD values reflect the small differences between two small numbers. This is particularly evident for the gas replicate pair; and
- Differences between laboratory LOR/PQLs in the case of inter-laboratory replicates;

However, some soil replicate pairs reported RPD differences for differences in concentrations which were at concentrations significantly higher than the LOR/PQLs (5x) including:

- BH205 | BD2/20190916 for zinc (455 | 31 mg/kg);
- BH207 | BD3/20190916 for zinc (36 | 54 mg/kg);
- BH212 | BD4/20190916 for lead (23 | 34 mg/kg); and
- TP05/0-0.3 | BD1/20200204 for zinc (120 | 77 mg/kg);

Overall these exceedances are not considered to be significant for the following reasons:

- Soil replicates, rather than homogenised soil duplicates, were used to minimise the risk of possible volatile loss, hence greater variability can be expected;
- The majority of RPDs within a replicate pair being within the acceptable limits;
- All other QA/QC parameters met the DQIs.

Furthermore, soil replicate pairs were taken in fill, which is heterogenous in nature. Therefore it is considered that the differences are more likely to be representative of the variability of the fill encountered rather than any significant errors in sampling and/or laboratory analysis.

Overall the replicate comparisons indicate that the sampling technique was generally consistent and repeatable and that the two laboratory sampling handling and analytical methods are comparable.

Q3. Data Quality Indicators

The reliability of field procedures and analytical results was assessed against the following data quality indicators (DQIs):

- Completeness – a measure of the amount of usable data from a data collection activity;

- Comparability – the confidence (qualitative) that data may be considered to be equivalent for each sampling and analytical event;
- Representativeness – the confidence (qualitative) of data representativeness of media present on-site;
- Precision – a measure of variability or reproducibility of data; and
- Accuracy – a measure of closeness of the data to the 'true' value.

The DQIs were assessed as outlined in the following Table Q4.

Table Q4: Data Quality Indicators

Data Quality Indicator	Method(s) of Achievement
Completeness	Planned systematic and selected target locations sampled; Preparation of field logs, sample location plan and chain of custody (COC) records; Preparation of field groundwater sampling sheets; Laboratory sample receipt information received confirming receipt of samples intact and appropriateness of the chain of custody; Samples analysed for contaminants of potential concern (COPC) identified in the Conceptual Site Model (CSM); Completion of COC documentation; NATA endorsed laboratory certificates provided by the laboratory; Satisfactory frequency and results for field and laboratory QC samples as discussed in Section Q2.
Comparability	Using appropriate techniques for sample recovery, storage and transportation, which were the same for the duration of the project; Works undertaken by appropriately experienced and trained DP environmental scientist / engineer; Use of NATA registered laboratories, with test methods the same or similar between laboratories; Satisfactory results for field and laboratory QC samples.
Representativeness	Target media sampled; Spatial distribution of sample locations; Sample numbers recovered and analysed are considered to be representative of the target media and complying with DQOs; Samples were extracted and analysed within holding times; Samples were analysed in accordance with the analysis request.
Precision	Acceptable RPD between original samples and replicates; Satisfactory results for all other field and laboratory QC samples.
Accuracy	Satisfactory results for all field and laboratory QC samples.

Based on the above, it is considered that the DQIs have been complied with. As such, it is concluded that the field and laboratory test data obtained are reliable and useable for this assessment.

Table QA1: Relative Percentage Difference Results – Intra-laboratory Soil Replicates

			Metals								TRH						BTEX				PAH				Asbestos		
			Arsenic	Cadmium	Chromium (VI)	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	TRH C6 - C10	TRH >C10-C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene [b]	Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ	Total PAHs	Asbestos ID in soil >0.1g/kg	Trace Analysis	Asbestos (50 g)
Sample ID [a]	Depth	Sampled Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-	-	-
BD1/20190916	0m	16/09/2019	6	<0.4	14	22	25	<0.1	12	52	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	0.3	NAD	NAD	<NAD
BH201	0 - 0.2m	16/09/2019	7	<0.4	18	18	28	<0.1	13	47	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	0.2	NAD	NAD	<NAD
		Difference	1	0	4	4	3	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	NaN	NaN	0
		RPD	15%	0%	25%	20%	11%	0%	8%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**40%**	NaN%	NaN%	0%
BD3/20190916	0m	16/09/2019	8	<0.4	13	17	15	<0.1	4	36	<25	<50	<25	<50	130	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	NAD	NAD	<NAD
BH207	0.4 - 0.5m	16/09/2019	9	<0.4	11	18	16	<0.1	5	54	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	NAD	NAD	<NAD
		Difference	1	0	2	1	1	0	1	18	0	0	0	0	30	0	0	0	0	0	0	0	0	0	NaN	NaN	0
		RPD	12%	0%	17%	6%	6%	0%	22%	**40%**	0%	0%	0%	0%	26%	0%	0%	0%	0%	0%	0%	0%	0%	0%	NaN%	NaN%	0%
BD1A/20190916	0m	16/09/2019	<4	<0.4	14	23	16	<0.1	9	57	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	NAD	NAD	<NAD
BH214	0.3 - 0.4m	16/09/2019	5	<0.4	14	24	15	<0.1	7	57	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	NAD	NAD	<NAD
		Difference	1	0	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NaN	NaN	0
		RPD	22%	0%	0%	4%	6%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	NaN%	NaN%	0%

Table QA2: Relative Percentage Difference Results – Intra-laboratory Water Replicates

			Metals								BTEX			
			Arsenic	Cadmium	Chromium (VI)	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Total Xylenes
Sample ID [a]	Depth	Sampled Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
BD1/20190924	-	24/09/2019	0.002	0.0002	<0.001	0.009	<0.001	<0.0005	0.005	0.021	<0.001	<0.001	<0.001	<0.003
BH208	-	24/09/2019	0.003	0.0002	<0.001	0.009	<0.001	<0.0005	0.006	0.023	<0.001	<0.001	<0.001	<0.003
		Difference	0.001	0	0	0	0	0	0.001	0.002	0	0	0	0
		RPD	**40%**	0%	0%	0%	0%	0%	18%	9	0%	0%	0%	0%
BD1/20190917	-	17/09/2019	0.001	0.0002	<0.001	0.009	0.001	<0.0005	0.002	0.23	<0.001	0.001	<0.001	<0.003
SW01	-	17/09/2019	0.001	0.0002	<0.001	0.011	0.002	<0.0005	0.002	0.24	<0.001	0.001	<0.001	<0.003
		Difference	0	0	0	0.002	0.001	0	0	0.01	0	0	0	0
		RPD	0%	0%	0%	20%	**67%**	0%	0%	4%	0%	0%	0%	0%

Table QA3: Relative Percentage Difference Results – Inter-laboratory Soil Replicates

			Metals								TRH						BTEX				PAH				Asbestos		
			Arsenic	Cadmium	Chromium (VI)	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	TRH C6 - C10	TRH >C10-C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene [b]	Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ	Total PAHs	Asbestos ID in soil >0.1g/kg	Trace Analysis	Asbestos (50 g)
Sample ID [a]	Depth	Sampled Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-	-	-
BD2/20190916	0.4 - 0.5m	16/09/2019	11	<1	21	19	20	<0.1	13	455	<10	<50	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1	<0.5	1.2	<0.5	NAD	NAD	<NAD
BH205	0.9 - 1m	16/09/2019	<4	<0.4	6	21	19	<0.1	3	31	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	NAD	NAD	<NAD
		Difference	7	0	15	2	1	0	10	424	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0	NaN	NaN	0
		RPD	**93%**	0%	**111%**	10%	5%	0%	**125%**	**174%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**82%**	0%	NaN%	NaN%	0%
BD2A/20190916	0.4 - 0.5m	16/09/2019	6	<1	21	26	17	<0.1	10	42	<10	<50	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1	<0.5	1.2	<0.5	NAD	NAD	<NAD
BH221	0.4 - 0.5m	16/09/2019	4	<0.4	18	20	14	<0.1	8	33	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	NAD	NAD	<NAD
		Difference	2	0	3	6	3	0	2	9	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0	NaN	NaN	0
		RPD	**40%**	0%	15%	26%	195	0%	22%	24%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**82%**	0%	NaN%	NaN%	0%
BD4/20190916	0.4 - 0.5m	16/09/2019	12	<1	14	28	34	<0.1	5	50	<10	<50	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1	<0.5	1.2	<0.5	NAD	NAD	<NAD
BH212	0.4 - 0.5m	16/09/2019	9	<0.4	11	23	23	<0.1	4	34	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	NAD	NAD	<NAD
		Difference	3	0	3	5	11	0	1	16	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0	NaN	NaN	0
		RPD	29%	0%	24%	20%	**39%**	0%	22%	**38%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**82%**	0%	NaN%	NaN%	0%

Table QA4: Trip Blank Results - Soils (mg/kg)

Sample ID	Benzene	Toluene	Ethylbenzene	Total Xylenes
TB	<0.2	<0.5	<1	<1
TB	<0.2	<0.5	<1	<1

Table QA5: Trip Spike Results – Soils (% Recover

Sample ID	Benzene	Toluene	Ethylbenzene	Total Xylenes
TS	106	108	103	205
TS	123	124	127	256

Table QA6: Trip Blank Results - Water (mg/L

Sample ID	Benzene	Toluene	Ethylbenzene	Xylenes (m&p)	Xylenes (o)	C6- C9	C6- C10 less BTEX (F1)	C6- C10	Naphthalene
TB - 17/9/2019	<0.001	<0.001	<0.001	<0.002	<0.001	<0.01	<0.01	<0.01	<0.001
TB - 24/9/2019	<0.001	<0.001	<0.001	<0.002	<0.001	-	-	-	-

Table QA7: Trip Spike Results – Water (% Recovery

Sample ID	Benzene	Toluene	Ethylbenzene	Xylenes (m&p)	Xylenes (o)
TS - 17/9/2019	104	104	118	114	115
TS - 24/9/2019	117	102	105	110	104

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Table QA8: Relative Percentage Difference Results – Soil Replicates

			Metals								TRH						BTEX				PAH			
			Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	TRH C6 - C10	TRH >C10-C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene [b]	Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ	Total PAHs
Sample ID	Lab	Sampled Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BD2/20200203	ELS	03/02/2020	6	<0.4	12	7	12	<0.1	6	24	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
TP12/0-0.5	ELS	03/02/2020	5	<0.4	10	5	13	<0.1	2	22	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
		Difference	1	0	2	2	1	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		RPD	18%	0%	18%	**33%**	8%	0%	**100%**	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
TP05/0-0.3	ELS	2/4/2020	5	<0.4	16	22	27	<0.1	11	120	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
BD1/20200204	ALS	2/4/2020	10	<1	15	24	36	<0.1	22	77	<10	<50	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
		Difference	5	0.6	1	2	9	0	1	43	15	0	15	0	0	0	0	0	0.5	0.5	0.5	0.5	0	0.5
		RPD	**66.70%**	**85.70%**	6.50%	8.70%	28.60%	0%	8.70%	**43.70%**	**85.70%**	0%	**85.70%**	0%	0%	0%	0%	0%	**66.70%**	**66.70%**	**66.70%**	**163.60%**	0%	**163.60%**

Table QA9: Relative Percentage Difference Results – Groundwater Replicates

			Metals								TRH						BTEX				PAH			
			Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	TRH C6 - C10	TRH >C10-C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene [b]	Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ	Total PAHs
Sample ID	Lab	Sampled Date	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
BH4	ELS	2/8/2020	1	<0.1	<1	<1	<1	<0.05	4	6	<10	<50	<10	<50	<100	<100	<1	<1	<1	<3	<1	<0.1	<0.5	<0.1
BD1/20200208	ELS	2/8/2020	2	<0.1	<1	1	<1	<0.05	4	5	<10	<50	<10	<50	<100	<100	<1	<1	<1	<3	<1	<0.1	<0.5	<0.1
		Difference	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		RPD	**66.70%**	0%	0%	0%	0%	0%	0%	18.20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Table QA10: Relative Percentage Difference Results – Gas Replicates

			Landfill Gases					TPH			BTEX					VOC							
			Methane	Carbon Dioxide	Oxygen	Carbon Monoxide	Hydrogen Sulfide	C5-C8	C9-C12	C9-10 (less aromatics)	F1 less BTEX	F2 less naphthalene	Benzene	Toluene	Ethylbenzene	m+p Xylene	o Xylene	Acetone	Isopropyl Alcohol	Naphthalene	Chloroform	PCE	Propylene	Hexane
Sample ID	Lab	Sampled Date	%	%	%	%	%	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3
BH201	ELS	2/26/2020	<0.01	1.8	20	<0.01	<0.1	<200	<50	<100	<200	<40	10	10	4	6	2	70	100	<2.6	<1.8	<2.7	8	3
BD1	ELS	2/26/2020	<0.01	1.8	20	<0.01	<0.1	<200	<50	<100	<200	<40	10	20	4	9	3	60	100	<2.6	<1.8	7	8	10
		Difference	0	0	0	0	0	0	0	0	0	0	0	10	0	3	1	10	0	0	0	4.3	0	7
		RPD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**66.70%**	0%	40%	40%	15.40%	0%	0%	0%	**88.7**	0%	**107.70%**

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Table QA11: Trip Blank Results - Soils (mg/kg)

Sample Id	Benzene	Toluene	Ethylbenzene	Total Xylenes
Trip Blank/03022020	<0.2	<0.5	<1	<1

Sample Id	Benzene	Toluene	Ethylbenzene	Total Xylenes
Trip Spike 03/02/2020	102%	100%	108%	215%

Table QA12: Trip Blank Results - Groundwater (mg/kg)

Sample Id	Benzene	Toluene	Ethylbenzene	Total Xylenes
Trip Blank/28022020	<0.2	<0.5	<1	<1

Sample Id	Benzene	Toluene	Ethylbenzene	m+p Xylenes	o Xylene
Trip Spike/28022020	105%	101%	95%	91%	96%

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CALIBRATION RECORD

Project:

Project Number: 84822.02

Calibrated Equipment

Model: Mini Rae Lite

Serial No.: 101184 (AIZS)

DP Reference:

Other: 10.6eV Lamp

Calibration

Date(s): 19.09.19

Operator(s): JSM

Zero Gas: 0 ppm ambient air

Span Gas: 100 ppm isobutylene

Span Gas Concentration: 100

Response Factor: 1.0

Pre-calibration Reading 98

Post-calibration Reading 100

Approved:

Date: 19.09.19

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TPS FLT90 CALIBRATION RECORD

Serial Number: 428561

DP Identification No. DP595

Project:

Project Number: 84822.02

PARAMETER	STANDARD	PRE CALIBRATION READING		POST CALIBRATION READING	
Temperature	* ~~23.0~~ 22.7	21.6	degrees C	22.7	degrees C
pH	10.06	9.84	pH units	10.07	pH units
	7.02	7.07	pH units	7.03	pH units
	4.00	3.83	pH units	4.00	pH units
Conductivity	0.0** uS/cm		µS/cm		µS/cm
	2.76 mS/cm	2.72	mS/cm	2.76	mS/cm
TDS	0.0** ppm		ppm		ppm
	36.0 ppk		ppk		ppk
Dissolved Oxygen	0.0% sat		ppm		
		0.1	%	0	%
	100.0**% sat		ppm		
		97	%	100	%
Turbidity	0*** NTU		NTU		NTU
	90 NTU	95.2	NTU	91.4	NTU
ORP #	240 mV	227	mV	-	mV

Calibrated by: JSH

Date: 19.9.19

* use NATA certified reference thermometer from soils clean lab
** air
*** distilled water
# factory calibrated – do a bump test

NOTES:

Form Updated 21Mar2011

Gas Calibration Certificate

Instrument **GA5000**
Serial No. **G505858**
Sensors **CH4, CO2, O2, CO, H2S**

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	O2	✓	
	CH4	✓	
	CO2	✓	
	CO	✓	
	H2S	✓	
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		20.9% Vol O2		Fresh Air	20.9% O2
CH4		60% CH4	NATA	SY244	59.7% CH4
CO2		40% CO2	NATA	SY244	39.7% CO2
CO		100ppm CO	NATA	SY277	99ppm CO
H2S		25ppm H2S	NATA	SY277	24ppm H2S

Calibrated by: **Sen Philip**

Calibration date: **16/09/2019**

Next calibration due: **14/03/2020**

Appendix E

Descriptive Notes

Borehole Logs

Sampling Methods

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Sampling

Sampling is carried out during drilling or test pitting to allow engineering examination (and laboratory testing where required) of the soil or rock.

Disturbed samples taken during drilling provide information on colour, type, inclusions and, depending upon the degree of disturbance, some information on strength and structure.

Undisturbed samples are taken by pushing a thin-walled sample tube into the soil and withdrawing it to obtain a sample of the soil in a relatively undisturbed state. Such samples yield information on structure and strength, and are necessary for laboratory determination of shear strength and compressibility. Undisturbed sampling is generally effective only in cohesive soils.

Test Pits

Test pits are usually excavated with a backhoe or an excavator, allowing close examination of the in-situ soil if it is safe to enter into the pit. The depth of excavation is limited to about 3 m for a backhoe and up to 6 m for a large excavator. A potential disadvantage of this investigation method is the larger area of disturbance to the site.

Large Diameter Augers

Boreholes can be drilled using a rotating plate or short spiral auger, generally 300 mm or larger in diameter commonly mounted on a standard piling rig. The cuttings are returned to the surface at intervals (generally not more than 0.5 m) and are disturbed but usually unchanged in moisture content. Identification of soil strata is generally much more reliable than with continuous spiral flight augers, and is usually supplemented by occasional undisturbed tube samples.

Continuous Spiral Flight Augers

The borehole is advanced using 90-115 mm diameter continuous spiral flight augers which are withdrawn at intervals to allow sampling or in-situ testing. This is a relatively economical means of drilling in clays and sands above the water table. Samples are returned to the surface, or may be collected after withdrawal of the auger flights, but they are disturbed and may be mixed with soils from the sides of the hole. Information from the drilling (as distinct from specific sampling by SPTs or undisturbed samples) is of relatively low reliability, due to the remoulding, possible mixing or softening of samples by groundwater.

Non-core Rotary Drilling

The borehole is advanced using a rotary bit, with water or drilling mud being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be determined from the cuttings, together with some information from the rate of penetration. Where drilling mud is used this can mask the cuttings and reliable identification is only possible from separate sampling such as SPTs.

Continuous Core Drilling

A continuous core sample can be obtained using a diamond tipped core barrel, usually with a 50 mm internal diameter. Provided full core recovery is achieved (which is not always possible in weak rocks and granular soils), this technique provides a very reliable method of investigation.

Standard Penetration Tests

Standard penetration tests (SPT) are used as a means of estimating the density or strength of soils and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289, Methods of Testing Soils for Engineering Purposes - Test 6.3.1.

The test is carried out in a borehole by driving a 50 mm diameter split sample tube under the impact of a 63 kg hammer with a free fall of 760 mm. It is normal for the tube to be driven in three successive 150 mm increments and the 'N' value is taken as the number of blows for the last 300 mm. In dense sands, very hard clays or weak rock, the full 450 mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form.

- In the case where full penetration is obtained with successive blow counts for each 150 mm of, say, 4, 6 and 7 as:

  4,6,7
  N=13

- In the case where the test is discontinued before the full penetration depth, say after 15 blows for the first 150 mm and 30 blows for the next 40 mm as:

  15, 30/40 mm

The results of the SPT tests can be related empirically to the engineering properties of the soils.

Dynamic Cone Penetrometer Tests / Perth Sand Penetrometer Tests

Dynamic penetrometer tests (DCP or PSP) are carried out by driving a steel rod into the ground using a standard weight of hammer falling a specified distance. As the rod penetrates the soil the number of blows required to penetrate each successive 150 mm depth are recorded. Normally there is a depth limitation of 1.2 m, but this may be extended in certain conditions by the use of extension rods. Two types of penetrometer are commonly used.

- Perth sand penetrometer - a 16 mm diameter flat ended rod is driven using a 9 kg hammer dropping 600 mm (AS 1289, Test 6.3.3). This test was developed for testing the density of sands and is mainly used in granular soils and filling.
- Cone penetrometer - a 16 mm diameter rod with a 20 mm diameter cone end is driven using a 9 kg hammer dropping 510 mm (AS 1289, Test 6.3.2). This test was developed initially for pavement subgrade investigations, and correlations of the test results with California Bearing Ratio have been published by various road authorities.

Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are generally based on Australian Standard AS1726:2017, Geotechnical Site Investigations. In general, the descriptions include strength or density, colour, structure, soil or rock type and inclusions.

Soil Types

Soil types are described according to the predominant particle size, qualified by the grading of other particles present:

Type	Particle size (mm)
Boulder	>200
Cobble	63 - 200
Gravel	2.36 - 63
Sand	0.075 - 2.36
Silt	0.002 - 0.075
Clay	<0.002

The sand and gravel sizes can be further subdivided as follows:

Type	Particle size (mm)
Coarse gravel	19 - 63
Medium gravel	6.7 - 19
Fine gravel	2.36 – 6.7
Coarse sand	0.6 - 2.36
Medium sand	0.21 - 0.6
Fine sand	0.075 - 0.21

Definitions of grading terms used are:

- Well graded - a good representation of all particle sizes
- Poorly graded - an excess or deficiency of particular sizes within the specified range
- Uniformly graded - an excess of a particular particle size
- Gap graded - a deficiency of a particular particle size with the range

The proportions of secondary constituents of soils are described as follows:

In fine grained soils (>35% fines)

Term	Proportion of sand or gravel	Example
And	Specify	Clay (60%) and Sand (40%)
Adjective	>30%	Sandy Clay
With	15 – 30%	Clay with sand
Trace	0 - 15%	Clay with trace sand

In coarse grained soils (>65% coarse)
- with clays or silts

Term	Proportion of fines	Example
And	Specify	Sand (70%) and Clay (30%)
Adjective	>12%	Clayey Sand
With	5 - 12%	Sand with clay
Trace	0 - 5%	Sand with trace clay

In coarse grained soils (>65% coarse)
- with coarser fraction

Term	Proportion of coarser fraction	Example
And	Specify	Sand (60%) and Gravel (40%)
Adjective	>30%	Gravelly Sand
With	15 - 30%	Sand with gravel
Trace	0 - 15%	Sand with trace gravel

The presence of cobbles and boulders shall be specifically noted by beginning the description with ‘Mix of Soil and Cobbles/Boulders’ with the word order indicating the dominant first and the proportion of cobbles and boulders described together.

Soil Descriptions

Cohesive Soils

Cohesive soils, such as clays, are classified on the basis of undrained shear strength. The strength may be measured by laboratory testing, or estimated by field tests or engineering examination. The strength terms are defined as follows:

Description	Abbreviation	Undrained shear strength (kPa)
Very soft	VS	<12
Soft	S	12 - 25
Firm	F	25 - 50
Stiff	St	50 - 100
Very stiff	VSt	100 - 200
Hard	H	>200
Friable	Fr	-

Cohesionless Soils

Cohesionless soils, such as clean sands, are classified on the basis of relative density, generally from the results of standard penetration tests (SPT), cone penetration tests (CPT) or dynamic penetrometers (PSP). The relative density terms are given below:

Relative Density	Abbreviation	Density Index (%)
Very loose	VL	<15
Loose	L	15-35
Medium dense	MD	35-65
Dense	D	65-85
Very dense	VD	>85

Soil Origin

It is often difficult to accurately determine the origin of a soil. Soils can generally be classified as:

- Residual soil - derived from in-situ weathering of the underlying rock;
- Extremely weathered material – formed from in-situ weathering of geological formations. Has soil strength but retains the structure or fabric of the parent rock;
- Alluvial soil – deposited by streams and rivers;
- Estuarine soil – deposited in coastal estuaries;
- Marine soil – deposited in a marine environment;
- Lacustrine soil – deposited in freshwater lakes;
- Aeolian soil – carried and deposited by wind;
- Colluvial soil – soil and rock debris transported down slopes by gravity;
- Topsoil – mantle of surface soil, often with high levels of organic material.
- Fill – any material which has been moved by man.

Moisture Condition – Coarse Grained Soils

For coarse grained soils the moisture condition should be described by appearance and feel using the following terms:

- Dry (D) Non-cohesive and free-running.
- Moist (M) Soil feels cool, darkened in colour.
  Soil tends to stick together.
  Sand forms weak ball but breaks easily.
- Wet (W) Soil feels cool, darkened in colour.
  Soil tends to stick together, free water forms when handling.

Moisture Condition – Fine Grained Soils

For fine grained soils the assessment of moisture content is relative to their plastic limit or liquid limit, as follows:

- ‘Moist, dry of plastic limit’ or ‘w <PL’ (i.e. hard and friable or powdery).
- ‘Moist, near plastic limit’ or ‘w ≈ PL (i.e. soil can be moulded at moisture content approximately equal to the plastic limit).
- ‘Moist, wet of plastic limit’ or ‘w >PL’ (i.e. soils usually weakened and free water forms on the hands when handling).
- ‘Wet’ or ‘w ≈LL’ (i.e. near the liquid limit).
- ‘Wet’ or ‘w >LL’ (i.e. wet of the liquid limit).

Rock Strength

Rock strength is defined by the Unconfined Compressive Strength and it refers to the strength of the rock substance and not the strength of the overall rock mass, which may be considerably weaker due to defects.

The Point Load Strength Index $Is_{(50)}$ is commonly used to provide an estimate of the rock strength and site specific correlations should be developed to allow UCS values to be determined. The point load strength test procedure is described by Australian Standard AS4133.4.1-2007. The terms used to describe rock strength are as follows:

Strength Term	Abbreviation	Unconfined Compressive Strength MPa	Point Load Index * $Is_{(50)}$ MPa
Very low	VL	0.6 - 2	0.03 - 0.1
Low	L	2 - 6	0.1 - 0.3
Medium	M	6 - 20	0.3 - 1.0
High	H	20 - 60	1 - 3
Very high	VH	60 - 200	3 - 10
Extremely high	EH	>200	>10

* Assumes a ratio of 20:1 for UCS to $Is_{(50)}$. It should be noted that the UCS to $Is_{(50)}$ ratio varies significantly for different rock types and specific ratios should be determined for each site.

Degree of Weathering

The degree of weathering of rock is classified as follows:

Term	Abbreviation	Description
Residual Soil	RS	Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are no longer visible, but the soil has not been significantly transported.
Extremely weathered	XW	Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are still visible
Highly weathered	HW	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable. Rock strength is significantly changed by weathering. Some primary minerals have weathered to clay minerals. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores.
Moderately weathered	MW	The whole of the rock material is discoloured , usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable, but shows little or no change of strength from fresh rock.
Slightly weathered	SW	Rock is partially discoloured with staining or bleaching along joints but shows little or no change of strength from fresh rock.
Fresh	FR	No signs of decomposition or staining.
Note: If HW and MW cannot be differentiated use DW (see below)		
Distinctly weathered	DW	Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching or may be decreased due to deposition of weathered products in pores.

Rock Descriptions

Degree of Fracturing

The following classification applies to the spacing of natural fractures in diamond drill cores. It includes bedding plane partings, joints and other defects, but excludes drilling breaks.

Term	Description
Fragmented	Fragments of <20 mm
Highly Fractured	Core lengths of 20-40 mm with occasional fragments
Fractured	Core lengths of 30-100 mm with occasional shorter and longer sections
Slightly Fractured	Core lengths of 300 mm or longer with occasional sections of 100-300 mm
Unbroken	Core contains very few fractures

Rock Quality Designation

The quality of the cored rock can be measured using the Rock Quality Designation (RQD) index, defined as:

$$\text{RQD \%} = \frac{\text{cumulative length of 'sound' core sections} \geq \text{100 mm long}}{\text{total drilled length of section being assessed}}$$

where 'sound' rock is assessed to be rock of low strength or stronger. The RQD applies only to natural fractures. If the core is broken by drilling or handling (i.e. drilling breaks) then the broken pieces are fitted back together and are not included in the calculation of RQD.

Stratification Spacing

For sedimentary rocks the following terms may be used to describe the spacing of bedding partings:

Term	Separation of Stratification Planes
Thinly laminated	< 6 mm
Laminated	6 mm to 20 mm
Very thinly bedded	20 mm to 60 mm
Thinly bedded	60 mm to 0.2 m
Medium bedded	0.2 m to 0.6 m
Thickly bedded	0.6 m to 2 m
Very thickly bedded	> 2 m

Symbols & Abbreviations

Douglas Partners

Introduction

These notes summarise abbreviations commonly used on borehole logs and test pit reports.

Drilling or Excavation Methods

C	Core drilling
R	Rotary drilling
SFA	Spiral flight augers
NMLC	Diamond core - 52 mm dia
NQ	Diamond core - 47 mm dia
HQ	Diamond core - 63 mm dia
PQ	Diamond core - 81 mm dia

Water

▷	Water seep
▽	Water level

Sampling and Testing

A	Auger sample
B	Bulk sample
D	Disturbed sample
E	Environmental sample
U_{50}	Undisturbed tube sample (50mm)
W	Water sample
pp	Pocket penetrometer (kPa)
PID	Photo ionisation detector
PL	Point load strength Is(50) MPa
S	Standard Penetration Test
V	Shear vane (kPa)

Description of Defects in Rock

The abbreviated descriptions of the defects should be in the following order: Depth, Type, Orientation, Coating, Shape, Roughness and Other. Drilling and handling breaks are not usually included on the logs.

Defect Type

B	Bedding plane
Cs	Clay seam
Cv	Cleavage
Cz	Crushed zone
Ds	Decomposed seam
F	Fault
J	Joint
Lam	Lamination
Pt	Parting
Sz	Sheared Zone
V	Vein

Orientation

The inclination of defects is always measured from the perpendicular to the core axis.

h	horizontal
v	vertical
sh	sub-horizontal
sv	sub-vertical

Coating or Infilling Term

cln	clean
co	coating
he	healed
inf	infilled
stn	stained
ti	tight
vn	veneer

Coating Descriptor

ca	calcite
cbs	carbonaceous
cly	clay
fe	iron oxide
mn	manganese
slt	silty

Shape

cu	curved
ir	irregular
pl	planar
st	stepped
un	undulating

Roughness

po	polished
ro	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

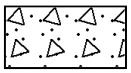
Symbols & Abbreviations

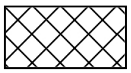
Graphic Symbols for Soil and Rock

General

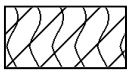

Asphalt

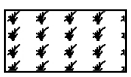

Road base

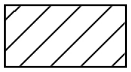

Concrete

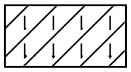

Filling

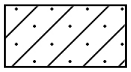
Soils


Topsoil

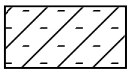

Peat

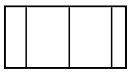

Clay

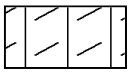

Silty clay

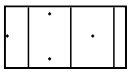

Sandy clay

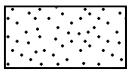

Gravelly clay

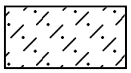

Shaly clay

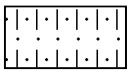

Silt


Clayey silt


Sandy silt

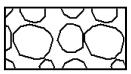

Sand

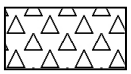

Clayey sand


Silty sand


Gravel

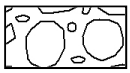

Sandy gravel


Cobbles, boulders

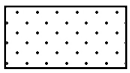

Talus

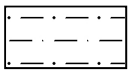
Sedimentary Rocks

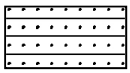

Boulder conglomerate

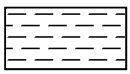

Conglomerate


Conglomeratic sandstone

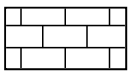

Sandstone


Siltstone

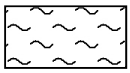

Laminite

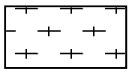

Mudstone, claystone, shale

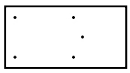

Coal


Limestone

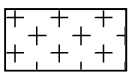
Metamorphic Rocks

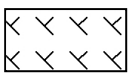

Slate, phyllite, schist

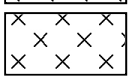

Gneiss

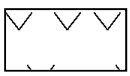

Quartzite

Igneous Rocks


Granite


Dolerite, basalt, andesite


Dacite, epidote


Tuff, breccia


Porphyry

Appendix F

Field Sheets

Douglas Partners
Geotechnics · Environment · Groundwater

Table F1: **Asbestos in Soil - Calculation Summary Sheet**

Asbestos Content	15	**%**	(assumed)

Health Screening Levels	0.05	**% w/w**	Bonded ACM (Residential D)	HSL D
	0.001	**% w/w**	AF/FA	

Test Pit	Sample Depth (m)	Date	Field Screening					
			Sample Volume (L)	Weight of Sample (g)	Number of Fragments	Size Range of Fragments (mm)	Weight of Retained ACM (g)	Bonded ACM in Soil (% w/w)
TP01	0.1-0.5	4/02/20	10	18200	0	-	0	0.000
TP02	0-0.3	4/02/20	10	14720	0	-	0	0.000
TP03	0-0.4	4/02/20	10	15700	1	30	**18**	**0.017**
TP04	0-0.4	4/02/20	10	15420	1	10	**5**	**0.005**
TP05	0-0.3	4/02/20	10	16440	0	0	0	0.000
TP06	0-0.3	3/02/20	10	15200	0	0	0	0.000
TP07	0-0.3	3/02/20	10	18200	0	0	0	0.000
TP07	0.3-0.8	3/02/20	10	15420	2	10-30	**20**	**0.019**
TP08	0-0.5	3/02/20	10	16200	0	0	0	0.000
TP08	1-1.5	3/02/20	10	16450	0	0	0	0.000
TP08	2-2.5	3/02/20	10	17200	1	50	**40**	**0.035**
TP09	0-0.5	3/02/20	10	17250	0	0	0	0.000
TP09	1-1.5	3/02/20	10	15570	2	10	**15**	**0.014**
TP09	1.5-2.0	3/02/20	10	14200	1	10	**10**	**0.011**
TP09	3-3.5	3/02/20	10	16540	3	10-20	**35**	**0.032**
TP10	0-0.5	3/02/20	10	15200	5	10-50	**85**	**0.084**
TP11	0-0.5	3/02/20	10	16700	0	0	0	0.000
TP11	1-1.5	3/02/20	10	18100	0	0	0	0.000
TP11	1.7-2.1	3/02/20	10	16890	0	0	0	0.000
TP12	0-0.5	3/02/20	10	17300	0	0	0	0.000
TP12	1-1.5	3/02/20	10	15900	0	0	0	0.000
TP12	2-2.5	3/02/20	10	17950	0	0	0	0.000
TP13	0-0.5	3/02/20	10	14580	0	0	0	0.000
TP14	0-0.2	3/02/20	10	16700	1	70	**62**	**0.056**
TP14	1.5-1.7	3/02/20	10	18600	1 *	40	30*	0.000
TP15	0-0.5	3/02/20	10	15170	0	0	0	0.000
TP15	1.5-1.7	3/02/20	10	17300	1	30	**20**	**0.017**
TP15	2.5-2.7	3/02/20	10	17030	0	0	0	0.000
TP15	3.5-3.7	3/02/20	10	18620	0	0	0	0.000

NOTES: NT = Not Tested

* Material confirmed by laboratory analysis to not contain asbestos

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_2^2/4 + n(\pi h_1 d_1^2/4 - \pi h_2 d_2^2/4)$
Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	ABH01
Project Name:	
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-
Bore Development Details	
Date/Time:	
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	
Micropurge and Sampling Details	
Date/Time:	28.2.20 1260
Sampled By:	
Weather Conditions:	
GW Level (pre-purge):	3.8 m bgl
GW Level (post sample):	4.7 m bgl
PSH observed:	Yes / (No) (interface / visual). Thickness if observed:
Observed Well Depth:	15.6 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
1250	21.5	7.26	12.08	6.70	60%	594
1251	20.5	7.51	12.00	7.00	53	594
1252	19.8	1.14	11.93	7.02	9.8	580
1253	19.6	0.98	11.86	7.03	10.6	570
1254	19.4	0.80	11.82	7.07	11.2	550
1255	19.4	0.77	11.78	7.04	10.6	536
1256	19.4	0.80	11.77	7.05	96.0	526
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	4.9 m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	pale grey
Sample ID:	ABH01
QA/QC Samples:	—
Sampling Containers and filtration:	3x 500 1x plast. 3x vials 1x metals 1x blue
Comments / Observations:	—

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_2^2/4 + n(\pi h_1 d_1^2/4 - \pi h_2 d_2^2/4)$

Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing

Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	ABH02
Project Name:	84822.03
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-

Bore Development Details	
Date/Time:	0
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	

Micropurge and Sampling Details	
Date/Time:	28.2.20
Sampled By:	JJH
Weather Conditions:	clear
GW Level (pre-purge):	4.8 m bgl
GW Level (post sample):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	15.2 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	WQM, Peri P., Water W., Bailer

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
0815	17.4	7.00	13.33	8.17		355
0816	17.5	4.40	13.32	7.83	70	366
0817	17.6	3.17	13.34	7.66	30	373
0818	17.6	1.84	13.24	7.63	11.1	385
0819	17.6	1.32	13.18	7.65	9.2	389
0820	17.6	1.21	13.15	7.65	7.0	393
0821	17.7	1.11	13.12	7.66	7.0	396
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	8m m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	clear
Sample ID:	ABH02
QA/QC Samples:	—
Sampling Containers and filtration:	3x 500ml 1x pup 3x vials 1x metal 1x blue
Comments / Observations:	—

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_2^2/4 + n(\pi h_1 d_1^2/4 - \pi h_2 d_2^2/4)$
Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	AB103
Project Name:	84822.03
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-
Bore Development Details	
Date/Time:	
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	
Micropurge and Sampling Details	
Date/Time:	0915 28.2.20
Sampled By:	JSJ
Weather Conditions:	clear
GW Level (pre-purge):	1.3 m bgl
GW Level (post sample):	3.2 m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	~~4.7~~ m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
0916	17.5	5.39	13.95	6.99	470	169
0917	17.3	4.54	13.89	6.77	482	173
0918	17.1	5.17	13.74	6.51	445	187
0919	17.2	5.55	13.68	6.44	467	192
0920	17.2	5.75	13.68	6.44	453	195
0921	17.2	6.20	13.69	6.43	464	199
0922	17.2	6.29	13 7.0	6.40	428	201
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	
Sample ID:	
QA/QC Samples:	
Sampling Containers and filtration:	AS ABNA
Comments / Observations:	

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_1^2/4 + n(\pi h_1 d_1^2/4 - \pi h_2 d_2^2/4)$
Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	BH2
Project Name:	84822.03
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-
Bore Development Details	
Date/Time:	1430 28.2.20
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	
Micropurge and Sampling Details	
Date/Time:	1430 28.2.20
Sampled By:	DSM
Weather Conditions:	clear
GW Level (pre-purge):	0.8 m bgl
GW Level (post sample):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	9.80 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	WQM, P.P, W.L, Baler

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
1140	19.1	5.53	8.96	7.09	1160	130
1141	17.8	2.84	9.23	7.05	960	146
1142	17.4	2.06	9.35	7.04	946	155
1143	17.1	1.36	9.66	7.03	891	166
1144	16.8	1.04	9.61	7.03	766	174
1145	16.7	0.94	9.69	7.03	767	178
1146	16.6	0.87	9.75	7.03	776	181
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	
Sample ID:	
QA/QC Samples:	
Sampling Containers and filtration:	
Comments / Observations:	

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_2^2/4 + n(\pi h_1 d_1^2/4 - \pi h_2 d_2^2/4)$
Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	BH4
Project Name:	84822.03
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-
Bore Development Details	
Date/Time:	
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	
Micropurge and Sampling Details	
Date/Time:	28.2.20 1030
Sampled By:	[illegible]
Weather Conditions:	clear
GW Level (pre-purge):	0.4 m bgl
GW Level (post sample):	0.5 m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	5.1 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	AS ABmo2

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1°C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
1040	16.1	1.36	9.15	6.47	1885	184
1041	15.8	0.95	9.20	6.47	2680	191
1042	15.7	0.75	9.09	6.47	2117	198
1043	15.5	0.64	9.98	6.47	1898	202
1044	15.5	0.63	8.95	6.47	1600	202
1045	15.4	0.61	8.94	6.47	1635	202
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	3-4 m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	pale-brown-brown (silty)
Sample ID:	BH4
QA/QC Samples:	BD1/20200228
Sampling Containers and filtration:	3x500 1x purp 3x vials 1x metals 1x blue
Comments / Observations:	

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_1^2/4 + n(\pi h_1 d_1^2/4 - \pi h_2 d_2^2/4)$
Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	BH201
Project Name:	
Project Number:	SL822.02
Site Location:	Eastern Creek
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-

Bore Development Details	
Date/Time:	
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	

Micropurge and Sampling Details	
Date/Time:	28.02.20
Sampled By:	AMS
Weather Conditions:	Fine, sunny, hot
GW Level (pre-purge):	3.5 m bgl
GW Level (post sample):	4.9 m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	5 m bgl
Estimated Bore Volume:	10.8 L
Total Volume Purged:	8 L
Equipment:	

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	**0.1 °C**	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
~~2.33~~	31.2	2.66	5.83	6.63	1.9	45
~~2.34~~	25.7	3.00	6.24	6.70	2.2	35
~~2.35~~	24.9	3.39	6.33	6.75	46	24
~~2.36~~ 2.48	24.8	0.83	7.45	6.47	669	-10
~~2.48~~ 2.49	25.0	0.84	7.47	6.75	546	-10
2.50	25.1	1.00	7.16	6.81	640	-13
2.51	22.8	0.66	7.11	6.85	772	-12
2.52	22.2	0.58	7.19	6.86	767	-11
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	4.5 m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	silty brown, odourless pale
Sample ID:	
QA/QC Samples:	
Sampling Containers and filtration:	
Comments / Observations:	

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_2^2/4 + n(\pi h_1 d_1^2/4 - \pi h_2 d_2^2/4)$
Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	BH204
Project Name:	[redacted]
Project Number:	84822.02
Site Location:	Eastern Creek
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-

Bore Development Details	
Date/Time:	
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	

Micropurge and Sampling Details	
Date/Time:	28.02.20
Sampled By:	AMS
Weather Conditions:	Fine, sunny, hot
GW Level (pre-purge):	0.85 m bgl
GW Level (post sample):	[redacted] m bgl 1.7-0.80 [redacted]
PSH observed:	Yes / (No) (interface / visual). Thickness if observed:
Observed Well Depth:	7.55 m bgl
Estimated Bore Volume:	~~48.24~~ L
Total Volume Purged:	17 L
Equipment:	Twister

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
28.02.20, 1.05pm	22.9	0.79	13.25	6.42	1.7	60
1.06	26.3	0.58	13.95	6.46	16.7	40
1.07	21.5	0.47	13.79	6.48	1368	19
1.08	20.4	0.29	13.02	6.50	2264	- [redacted] 5
1.09	19.8	0.22	12.68	6.51	2669	-30
1.10	19.7	0.18	12.46	6.51	3160	-37
1.11	19.2	0.16	12.46	6.51	MAX	-48
~~1.12~~						

Additional Readings Following stabilisation:	DO % Sat	SPC	TDS

Sample Details

Sampling Depth (rationale):	5.5 m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	Faint sulfur smell, some sheen apparent, pale brown, opaque
Sample ID:	
QA/QC Samples:	
Sampling Containers and filtration:	
Comments / Observations:	

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_2^2/4 + n(\pi h_1 d_1^2/4 - \pi h_2 d_2^2/4)$
Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	BH208
Project Name:	84822.03
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-
Bore Development Details	
Date/Time:	
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	
Micropurge and Sampling Details	
Date/Time:	1330 28.2.20
Sampled By:	JJH
Weather Conditions:	clear
GW Level (pre-purge):	3.1 m bgl
GW Level (post sample):	2.9 m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	10.1 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
1340	20.1	3.72	14.42	6.68	59.2	291
1341	19.2	1.55	14.46	6.67	269	319
1342	18.8	1.26	14.53	6.66	255	333
1343	18.6	1.07	14.54	6.66	282	343
1344	18.5	0.99	14.60	6.67	300	349
1345	18.4	0.96	14.62	6.68	350	352
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	6-7 m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	pale grey-brown
Sample ID:	BH208
QA/QC Samples:	—
Sampling Containers and filtration:	3x500ml 1x metals (f) 1x purp 1x blue 3x vials
Comments / Observations:	

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_2^2/4 + n(\pi h_1 d_1^2/4 - \pi h_2 d_2^2/4)$
Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	BH213
Project Name:	
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-
Bore Development Details	
Date/Time:	
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	
Micropurge and Sampling Details	
Date/Time:	0950 28.2.20
Sampled By:	JSN
Weather Conditions:	clear
GW Level (pre-purge):	0.75 m bgl
GW Level (post sample):	1.80 m bgl
PSH observed:	Yes / (No) (interface / visual). Thickness if observed:
Observed Well Depth:	4.3 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
0958	17.7	6.17	9.27	6.57	10	153
0959	17.2	3.54	8.58	6.52	1500	170
1000	17.1	2.70	8.01	6.5	2930	184
1001	17.0	2.43	7.66	6.49	2750	190
1002	17.1	2.31	7.52	6.48	2421	194
1003	17.1	2.21	7.42	6.47	2310	197

Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	3 m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	pale brown → brown (silty)
Sample ID:	BH213
QA/QC Samples:	
Sampling Containers and filtration:	3x500 1x purp 3x vials 1x metals 1x blue
Comments / Observations:	slight rxn w/ HCl preserv. (fumes)

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_2^2/4 + n(\pi h_1 d_1^2/4 - \pi h_2 d_2^2/4)$
Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	BH4
Project Name:	
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-

Bore Development Details	
Date/Time:	
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	

Micropurge and Sampling Details	
Date/Time:	7.3.20
Sampled By:	JJM
Weather Conditions:	Clear
GW Level (pre-purge):	0.65 m bgl
GW Level (post sample):	0.7 m bgl
PSH observed:	Yes / (No) (interface / visual). Thickness if observed:
Observed Well Depth:	5.1 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	~4 L
Equipment:	WQM, Int mtr, Perspump.

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
0900	17.5	1.89	10.36	6.41	54.6	19
0901	17.5	1.45	10.37	6.41	47.2	19
0902	17.6	1.13	10.38	6.41	41.0	19
0903	17.6	0.99	10.38	6.42	39.0	19
0904	17.6	0.93	10.38	6.42	39.4	18
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	2-3 m bgl, mid column
Sample Appearance (e.g. colour, siltiness, odour):	pale grey
Sample ID:	BH4
QA/QC Samples:	BD1
Sampling Containers and filtration:	3x 500mL 1x Metals (purp) 3x Vials 1x Metals filtered 1x CN (Blue)
Comments / Observations:	—

1.45 - 7.9

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_1^2/4 + n(\pi h_1 d_1^2/4 - \pi h_2 d_2^2/4)$
Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	BH2
Project Name:	
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-

Bore Development Details	
Date/Time:	7/4/20 11:54
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	

Micropurge and Sampling Details	
Date/Time:	
Sampled By:	
Weather Conditions:	
GW Level (pre-purge):	0.68 m bgl
GW Level (post sample):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	9.93 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
	18.4	0.45	11.28	6.73	55	-26
	18.1	0.31	11.99	6.67	63.4	-36
	18.0	0.23	12.4	6.63	45.2	-54
	18.0	0.21	12.56	6.62	50.4	-63
	17.9	0.17	12.65	6.61	38.9	-81
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	7.3 m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	No odour
Sample ID:	BH2
QA/QC Samples:	
Sampling Containers and filtration:	
Comments / Observations:	

1.39 - 77

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_2^2/4 + n(\pi h_1 d_1^2/4 - \pi h_2 d_2^2/4)$

Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing

Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	BH201
Project Name:	
Project Number:	84822.03
Site Location:	339 Wallgrove Rd
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-
Bore Development Details	
Date/Time:	
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	
Micropurge and Sampling Details	
Date/Time:	7/04/2020
Sampled By:	Tim B
Weather Conditions:	Overcast
GW Level (pre-purge):	0.62 m bgl
GW Level (post sample):	2.58 m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	5.3 m bgl
Estimated Bore Volume:	38.16 L
Total Volume Purged:	L
Equipment:	

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	**0.1° C**	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
	19.7	1.75	6.21	6.95	49.9	42
	19.8	1.77	5.62	6.96	43.6	34
	19.8	1.80	5.19	6.98	42.9	32
	19.9	1.83	4.87	6.97	39.6	29
	20.0	1.86	4.48	6.97	36.9	26

Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	~3.5 m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	No odour, murky colour
Sample ID:	BH201
QA/QC Samples:	
Sampling Containers and filtration:	
Comments / Observations:	

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_2^2/4 + n(\pi h_1 d_1^2/4 - \pi h_2 d_2^2/4)$
Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	BH204
Project Name:	
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-

Bore Development Details	
Date/Time:	
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	

Micropurge and Sampling Details	
Date/Time:	7/04/20 10:30
Sampled By:	Tim B
Weather Conditions:	over cast
GW Level (pre-purge):	0.95 m bgl
GW Level (post sample):	1.07 m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	7.92 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
	19.9	1.87	16.84	6.55	51.9	-62
	18.3	0.80	16.69	6.59	50.0	-122
	17.7	0.54	16.66	6.60	48.2	-124
	17.4	0.39	16.61	6.61	49.3	-133
	17.2	0.29	16.56	6.62	50.4	-136
	17.1	0.23	16.50	6.62	49.7	-138
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	
Sample ID:	
QA/QC Samples:	
Sampling Containers and filtration:	
Comments / Observations:	

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_1^2/4 + n(\pi h_1 d_1^2/4 - \pi h_2 d_2^2/4)$
Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	BH208
Project Name:	
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-

Bore Development Details	
Date/Time:	
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	

Micropurge and Sampling Details	
Date/Time:	7/4/20 1300
Sampled By:	
Weather Conditions:	
GW Level (pre-purge):	2.12 m bgl
GW Level (post sample):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	9.93 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
	19.4	0.62	13.98	6.55	72.1	24
	19.3	0.54	13.80	6.56	74.1	21
	19.3	0.35	13.51	6.56	65	18
	19.4	0.35	13.31	6.57	71.4	15
	19.4	0.27	12.8	6.58	66.5	13
	19.4	0.19	12.32	6.59	76.9	9
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	
Sample ID:	
QA/QC Samples:	
Sampling Containers and filtration:	
Comments / Observations:	

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_2^2/4 + n(\pi h_1 d_1^2/4 - \pi h_2 d_2^2/4)$
Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	BH213
Project Name:	
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-
Bore Development Details	
Date/Time:	
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	
Micropurge and Sampling Details	
Date/Time:	0945
Sampled By:	JJN
Weather Conditions:	clear
GW Level (pre-purge):	0.75 m bgl
GW Level (post sample):	0.70 m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	4.5 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	~5 L
Equipment:	WQM, Int. Meter, Peripump.

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
0950	12.8	3.51	12.91	6.34	370	30
0951	12.8	2.63	12.88	6.37	296	29
0952	12.8	2.03	12.86	6.36	337	29
0953	13.0	1.21	12.84	6.36	342	28
0954	13.0	1.16	12.81	6.36	334	28
0955	13.1	1.11	12.82	6.36	290	29
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	2-3 m bgl, middle of column
Sample Appearance (e.g. colour, siltiness, odour):	pale grey-brown
Sample ID:	BH213
QA/QC Samples:	—
Sampling Containers and filtration:	3x500 ml 1x Red (filtered) 1x Purp 1x Blue 3x Vials
Comments / Observations:	—

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_1^2/4 + n(\pi h_1 d_1^2/4 - \pi h_2 d_2^2/4)$
Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	4BH01
Project Name:	
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-

Bore Development Details	
Date/Time:	
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	

Micropurge and Sampling Details	
Date/Time:	7.3.20 1220
Sampled By:	JM
Weather Conditions:	overcast
GW Level (pre-purge):	3.75 m bgl
GW Level (post sample):	3.80 m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	15.3 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	Water, Int. Meter, Peri pump.

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
1230	15.5	3.30	7.60	7.03	7.5	32
1231	15.3	2.86	7.07	7.01	5.0	31
1232	15.1	2.82	7.05	7.05	4.5	30
1233	15.1	2.77	6.81	7.05	6.7	30
1234	15.1	2.72	6.76	7.05	5.0	30
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	9-10 m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	Clear to pale grey
Sample ID:	
QA/QC Samples:	
Sampling Containers and filtration:	
Comments / Observations:	

Logger removed at 1220
Logger reinstalled at 1300

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_2^2/4 + n(\pi h_1 d_1^2/4 - \pi h_2 d_2^2/4)$
Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	ABH02
Project Name:	
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-
Bore Development Details	
Date/Time:	
Purged By:	
GW Level (pre-purge):	4.20 m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	
Micropurge and Sampling Details	
Date/Time:	7/4/20 1:30
Sampled By:	
Weather Conditions:	
GW Level (pre-purge):	4.20 m bgl
GW Level (post sample):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	15.30 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
13:50	21.2	5.00	7.94	12.15	47.7	-126
	21.2	5.57	7.89	12.14	38.2	-133
	21.2	5.93	7.93	12.15	48.1	-137
	21.2	5.99	7.94	12.14	47.3	-146
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	
Sample ID:	
QA/QC Samples:	
Sampling Containers and filtration:	
Comments / Observations:	13:30 lifted data logger

86978.01 WNSW

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_2^2/4 + n(\pi h_1 d_1^2/4 - \pi h_2 d_2^2/4)$
Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	ABH03
Project Name:	
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-

Bore Development Details	
Date/Time:	
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	

Micropurge and Sampling Details	
Date/Time:	10/5
Sampled By:	JJH
Weather Conditions:	Overcast
GW Level (pre-purge):	1.1 m bgl
GW Level (post sample):	1.2 m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	4.0 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	WQM, Int. Mtr, Peripump.

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
1035	12.4	1.90	17.35	6.05	59.7	29
1036	11.9	1.20	17.39	6.03	57.8	29
1037	11.8	1.02	17.39	6.03	61.8	29
1038	11.8	1.03	17.30	6.03	66.0	29
1039	11.6	0.98	17.27	6.03	75.2	29

Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	pale grey-brn
Sample ID:	ABH03
QA/QC Samples:	—
Sampling Containers and filtration:	3x500 1-x filtered (Pf) 1x Purple 1x Blue 3x Vials
Comments / Observations:	—

1028 Remove data logger

1100 Reinstalled logger

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_2^2/4 + n(\pi h_1 d_1^2/4 - \pi h_2 d_2^2/4)$

Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing

Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	ABH08
Project Name:	
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-

Bore Development Details	
Date/Time:	
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	

Micropurge and Sampling Details	
Date/Time:	7.5.20 1330
Sampled By:	JJM
Weather Conditions:	Overcast
GW Level (pre-purge):	5.50 m bgl
GW Level (post sample):	m bgl
PSH observed:	Yes / (No) (interface / visual). Thickness if observed:
Observed Well Depth:	14.80 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	WQM, Int. Mets, Peripump

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
1340	17.1	6.19	4.07	7.59	18.6	23
1341	16.8	6.35	4.25	7.49	12.2	20
1342	16.7	6.99	4.58	7.42	11.4	10
1343	16.7	6.61	5.11	7.32	9.5	-10
1344	16.6	6.68	6.10	7.20	12.0	-36
1345	16.6	6.66	6.80	7.15	9.5	-41
1346	16.6	6.16	7.10	7.03	10	-48
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	
Sample ID:	
QA/QC Samples:	
Sampling Containers and filtration:	
Comments / Observations:	

Logger removed at 1330

Logger reinstalled at 1420

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
= $\pi h_1 d_1^2/4 + n(\pi h_2 d_2^2/4 - \pi h_2 d_3^2/4)$
Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_2 = diameter of annulus
h_2 = length of filter pack
d_3 = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	BH201
Project Name:	
Project Number:	84822.02
Site Location:	
Bore GPS Co-ord:	
Installation Date:	16.9.19
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-

Bore Development Details	
Date/Time:	17.9.19 0800
Purged By:	JS
GW Level (pre-purge):	6.10 m bgl
GW Level (post-purge):	6.10 m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	6.- m bgl * 5.4
Estimated Bore Volume:	DRY L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	Tweeter

Micropurge and Sampling Details	
Date/Time:	24.9.19
Sampled By:	1000
Weather Conditions:	clear
GW Level (pre-purge):	4.8 m bgl
GW Level (post sample):	5.4 m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	5.4 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L (5.4 - 4.8) x 7.2
Equipment:	Peristaltic pump, Bailer, Water whistle.

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	0.1°C	+/- 0.3 mg/L	+/- 3%	+/- 0.1	+/- 10%	+/- 10 mV

Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	4 -> 5.4 m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	Brown -> dark grey
Sample ID:	BH201
QA/QC Samples:	—
Sampling Containers and filtration:	1x Amber 3x vials 1x Metals (F)
Comments / Observations:	well dry, no parameters, limited sampling

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
= $\pi h_c d_c^2/4 + n(\pi h_c d_c^2/4 - \pi h_c d_c^2/4)$
Where: π = 3.14
n = porosity (0.3 for most filter pack material)
h_c = height of water column
d_c = diameter of annulus
h_c = length of filter pack
d_c = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	BH 204
Project Name:	
Project Number:	84822.02
Site Location:	
Bore GPS Co-ord:	
Installation Date:	16.9.19
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-

Bore Development Details	
Date/Time:	17.9.19 0810
Purged By:	JS
GW Level (pre-purge):	2.23 m bgl
GW Level (post-purge):	5.25 m bgl 1 hr purge
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	6.30 m bgl
Estimated Bore Volume:	30 L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	Twister

Micropurge and Sampling Details	
Date/Time:	1430 20.9.19
Sampled By:	JTM
Weather Conditions:	Clear
GW Level (pre-purge):	1.3 m bgl
GW Level (post sample):	1.4 m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	8 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	WQM, peripump, Int. Meter

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	**0.1° C**	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
1431	20.4	1.56	21.06	6.86	275	-39
1432	19.6	1.34	21.38	6.85	266	-59
1433	18.7	1.09	21.68	6.85	257	-77
1434	18.4	0.92	21.67	6.84	227	-84
1435	18.2	0.86	21.71	6.84	206	-87
1436	18.0	0.74	21.74	6.85	209	-90
	18.0	0.71	21.74	6.85	255	-91
	17.9	0.70	21.73	6.85	194	-92
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	
Sample ID:	
QA/QC Samples:	
Sampling Containers and filtration:	
Comments / Observations:	

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
= πh.d$_c^2$/4 + n(πh.d$_b^2$/4-πh.d$_c^2$/4)
Where: π = 3.14
n = porosity (0.3 for most filter pack material)
h$_c$ = height of water column
d$_b$ = diameter of annulus
h$_f$ = length of filter pack
d$_c$ = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	BH02
Project Name:	
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-

Bore Development Details	
Date/Time:	9.10 17.9.17
Purged By:	JS
GW Level (pre-purge):	1.88 m bgl
GW Level (post-purge):	1.85 m bgl 25min purge
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	10.75 m bgl
Estimated Bore Volume:	63 L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	

Micropurge and Sampling Details	
Date/Time:	1306 20.9.17
Sampled By:	JJh
Weather Conditions:	Clear
GW Level (pre-purge):	0.85 m bgl
GW Level (post sample):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	10.05 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	WQM, Peripump, Ind meter

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	**0.1°C**	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
1300	20.4	1.29	13.59	7.62	58	81
1301	19.5	0.67	14.02	7.00	48	73
1302	19.0	0.37	14.12	6.98	44	68
1303	18.7	0.29	14.16	6.97	49	65
1304	18.6	0.27	14.16	6.97	37	59
1305	18.6	0.21	14.16	6.97	39	56
1306						
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	
Sample ID:	
QA/QC Samples:	
Sampling Containers and filtration:	
Comments / Observations:	

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
= $\pi h_c d_c^2/4 + n(\pi h_f d^2/4 - \pi h_f d_c^2/4)$
Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_c = height of water column
d = diameter of annulus
h_f = length of filter pack
d_c = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	BH04 (South)
Project Name:	
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-

Bore Development Details	
Date/Time:	17.9.19 0845
Purged By:	JS
GW Level (pre-purge):	2.12 m bgl
GW Level (post-purge):	5.35 m bgl
PSH observed:	Yes / (No) (interface / visual). Thickness if observed:
Observed Well Depth:	5.90 m bgl
Estimated Bore Volume:	27 L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	

Micropurge and Sampling Details	
Date/Time:	1020
Sampled By:	JSH
Weather Conditions:	Clear
GW Level (pre-purge):	0.1 m bgl NB. Heavy rain 2 days preceding.
GW Level (post sample):	0.1 m bgl
PSH observed:	Yes / (No) (interface / visual). Thickness if observed:
Observed Well Depth:	5.15 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	WQM, Pump, Int. Meter

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	**0.1°C**	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
1020	18.4	1.45	7.39	6.45	200	197
1021	17.3	1.03	7.44	6.51	270	170
1022	16.8	0.86	7.34	6.55	246	166
1024	16.4	0.64	7.42	6.62	209	162
1025	16.7	0.54	7.42	6.66	196	161
	16.0	0.55	7.41	6.66	187	160
	16.0	0.52	7.41	6.66	186	160
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	
Sample ID:	
QA/QC Samples:	
Sampling Containers and filtration:	
Comments / Observations:	

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
= πh.d$_c^2$/4 + n(πh.d$_b^2$/4-πh.d$_c^2$/4)
Where: π = 3.14
n = porosity (0.3 for most filter pack material)
h$_c$ = height of water column
d$_b$ = diameter of annulus
h$_b$ = length of filter pack
d$_c$ = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	BH213
Project Name:	
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-

Bore Development Details	
Date/Time:	18.9.19
Purged By:	JSM
GW Level (pre-purge):	~~ID~~ m bgl
GW Level (post-purge):	4.5 m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	4.7 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	

Micropurge and Sampling Details	
Date/Time:	1430 20.9.19
Sampled By:	JSM
Weather Conditions:	Clear
GW Level (pre-purge):	1.65 m bgl
GW Level (post sample):	2.35 m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	4.7 m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	Water, peristaltic pump, flow meter.

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	**0.1° C**	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
1142	19.1	5.00	15.94	6.75	188	142
1146	18.5	4.56	13.98	6.66	163	142
1147	17.8	4.42	14.10	6.65	122	144
1148	17.0	4.31	14.28	6.62	88	144
1149	16.6	4.16	14.26	6.62	92	144
1150	16.7	4.13	14.25	6.63	93	144
1151	16.6	4.19	14.25	6.63	88	146
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	
Sample ID:	
QA/QC Samples:	
Sampling Containers and filtration:	
Comments / Observations:	

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
= $\pi h_c d_c^2/4 + n(\pi h_f d_f^2/4 - \pi h_f d_c^2/4)$
Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_c = height of water column
d_c = diameter of annulus
h_f = length of filter pack
d_c = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	BH208
Project Name:	84822.02
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	23.9.19
GW Level (during drilling):	— m bgl
Well Depth:	10 m bgl
Screened Interval:	0.7-10 m bgl
Contaminants/Comments:	-

Bore Development Details	
Date/Time:	23.9.19
Purged By:	JJM
GW Level (pre-purge):	6.3 m bgl NB: heavy rain / surface water in well
GW Level (post-purge):	10~ m bgl
PSH observed:	Yes / (No) (interface / visual). Thickness if observed:
Observed Well Depth:	10~ m bgl
Estimated Bore Volume:	70 L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	Twister pump, int. meter

Micropurge and Sampling Details	
Date/Time:	24.9.19
Sampled By:	JJM
Weather Conditions:	clear
GW Level (pre-purge):	3m m bgl
GW Level (post sample):	2.9 m bgl
PSH observed:	Yes / (No) interface / (visual). Thickness if observed:
Observed Well Depth:	10~ m bgl
Estimated Bore Volume:	50.4 L
Total Volume Purged:	L
Equipment:	YSI, Int. Meter, Peristaltic pump, water whistle.

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	0.1°C	+/- 0.3 mg/L	+/- 3%	+/- 0.1	+/- 10%	+/- 10 mV
	19.7	4.67	17.45	6.98	62.4	171
	19.5	4.42	17.46	6.99	17.0	171
	19.4	3.93	17.45	6.98	13.1	170
	19.4	3.70	17.41	6.96	12.9	170
	19.4	3.45	17.39	6.95	29.8	168
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	6 m bgl, middle of screen
Sample Appearance (e.g. colour, siltiness, odour):	V. pale grey
Sample ID:	BH208
QA/QC Samples:	BD1/20190924
Sampling Containers and filtration:	2x Amber 1x metals (f.) 1x phenols 1x Green 1x Cyanide 3x VOAs
Comments / Observations:	—

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_1^2/4 + n(\pi h_2 d_2^2/4 - \pi h_2 d_1^2/4)$

Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_2 = diameter of annulus
h_2 = length of filter pack
d_1 = diameter of casing

Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	
Project Name:	
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-
Bore Development Details	
Date/Time:	
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	
Micropurge and Sampling Details	
Date/Time:	
Sampled By:	
Weather Conditions:	
GW Level (pre-purge):	m bgl
GW Level (post sample):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1 °C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	
Sample ID:	
QA/QC Samples:	
Sampling Containers and filtration:	
Comments / Observations:	

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_1^2/4 + n(\pi h_2 d_2^2/4 - \pi h_2 d_1^2/4)$

Where: $\pi = 3.14$

n = porosity (0.3 for most filter pack material)

h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing

Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	
Project Name:	
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-
Bore Development Details	
Date/Time:	
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	
Micropurge and Sampling Details	
Date/Time:	
Sampled By:	
Weather Conditions:	
GW Level (pre-purge):	m bgl
GW Level (post sample):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	
Sample ID:	
QA/QC Samples:	
Sampling Containers and filtration:	
Comments / Observations:	

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
= πh.d$_c^2$/4 + n(πh.d$_b^2$/4-πh.d$_c^2$/4)
Where: π = 3.14
n = porosity (0.3 for most filter pack material)
h$_c$ = height of water column
d$_b$ = diameter of annulus
h$_f$ = length of filter pack
d$_c$ = diameter of casing
Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	
Project Name:	
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-

Bore Development Details	
Date/Time:	
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	

Micropurge and Sampling Details	
Date/Time:	
Sampled By:	
Weather Conditions:	
GW Level (pre-purge):	m bgl
GW Level (post sample):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	
Sample ID:	
QA/QC Samples:	
Sampling Containers and filtration:	
Comments / Observations:	

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Groundwater Field Sheet

Bore Volume = casing volume + filter pack volume
$= \pi h_1 d_1^2/4 + n(\pi h_2 d_2^2/4 - \pi h_2 d_3^2/4)$

Where: $\pi = 3.14$
n = porosity (0.3 for most filter pack material)
h_1 = height of water column
d_1 = diameter of annulus
h_2 = length of filter pack
d_2 = diameter of casing

Bore Vol Normally: 7.2*h

Project and Bore Installation Details	
Bore / Standpipe ID:	
Project Name:	
Project Number:	
Site Location:	
Bore GPS Co-ord:	
Installation Date:	
GW Level (during drilling):	- m bgl
Well Depth:	m bgl
Screened Interval:	m bgl
Contaminants/Comments:	-
Bore Development Details	
Date/Time:	
Purged By:	
GW Level (pre-purge):	m bgl
GW Level (post-purge):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	(target: no drill mud, min 3 well vol. or dry)
Equipment:	
Micropurge and Sampling Details	
Date/Time:	
Sampled By:	
Weather Conditions:	
GW Level (pre-purge):	m bgl
GW Level (post sample):	m bgl
PSH observed:	Yes / No (interface / visual). Thickness if observed:
Observed Well Depth:	m bgl
Estimated Bore Volume:	L
Total Volume Purged:	L
Equipment:	

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Turbidity	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1 °C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10%**	**+/- 10 mV**
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	m bgl,
Sample Appearance (e.g. colour, siltiness, odour):	
Sample ID:	
QA/QC Samples:	
Sampling Containers and filtration:	
Comments / Observations:	

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Groundwater Field Sheet

Project and Bore Installation Details					
Bore / Standpipe ID:	**BH2**				
Project Name:	Due Diligence Investigation				
Project Number:	84822				
Site Location:	339 Wallgrove Road, Eastern Creen				
Bore Easting:	301436	Northing:	6255929		
Installation Date:	6/05/2015				
GW Level (during drilling):	0.3 m bgl				
Well Depth:	10 m bgl				
Screened Interval:	4.5-10 m bgl				
Contaminants/Comments:					
Bore Development Details					
Date/Time:	11/05/15; 9:54 am		13/05/15; 9:11am		
Purged By:	CB		CB		
GW Level (pre-purge):	0.48 m bgl		0.59 m bgl		
GW Level (post-purge):	3.06 m bgl		4.64 m bgl		
PSH observed:	No		No		
Observed Well Depth:	10.3 m bgl		9.88 m bgl		
Estimated Bore Volume:	70.7 L		66.89 L		
Total Volume Purged:	200.0 L		200.0 L (dry)		
Equipment:	12V Twister Pump		12V Twister Pump		
Micropurge and Sampling Details					
Date/Time:	15/05/2015				
Sampled By:	RJL				
Weather Conditions:	Sunny				
GW Level (pre-purge):	0.45 m bgl				
GW Level (post sample):	0.76 m bgl				
PSH observed:	No				
Observed Well Depth:	9.91 m bgl				
Estimated Bore Volume:	67 L				
Total Volume Purged:	L				
Equipment:	Geopump and disposable tubing				
Water Quality Parameters					
Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10 mV**
10:08	17.9	0.88	10462	7.91	64
10:09	18	0.66	10538	7.74	60
10:10	18	0.59	10638	7.64	67
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS		
Sample Details					
Sampling Depth (rationale):	2.5 m bgl,				
Sample Appearance (e.g. colour, siltiness, odour)	No odour, silty, clear last 30L.				
Sample ID:	MW2				
QA/QC Samples:					
Sampling Containers and filtration:	2 x 1L glass, 2x 40mL glass vials (HCl), 1x200ml plastic (H2SO4), 1x 100mL plastic (HNO3 (filtered))				
Comments / Observations:					

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Groundwater Field Sheet

Project and Bore Installation Details			
Bore / Standpipe ID:	**BH4**		
Project Name:	Due Diligence Investigation		
Project Number:	84822		
Site Location:	339 Wallgrove Road, Eastern Creen		
Bore Easting:	301435	Northing:	6255712
Installation Date:	6/05/2015		
GW Level (during drilling):	0.5 m bgl		
Well Depth:	5 m bgl		
Screened Interval:	0.5-5.0 m bgl		
Contaminants/Comments:			

Bore Development Details			
Date/Time:	11/05/15; 11:07 am	13/05/15; 10:10 am	14/05/15; 10:00am
Purged By:	CB	CB	CB
GW Level (pre-purge):	0.51 m bgl	0.33 m bgl	0.36 m bgl
GW Level (post-purge):	0.76 m bgl	1.41 m bgl	1.97 m bgl
PSH observed:	No	No	No
Observed Well Depth:	4.2 m bgl	4.42 m bgl	5.08 m bgl
Estimated Bore Volume:	26.6 L	29.45 L	34.42 L
Total Volume Purged:	60.0 L (dry)	60.0 L (dry)	50.0 L (dry)
Equipment:	12V Twister Pump	12V Twister Pump	12V Twister Pump

Micropurge and Sampling Details		
Date/Time:	15/05/2015	
Sampled By:	RJL	
Weather Conditions:	Clear	
GW Level (pre-purge):	0.37 m bgl	
GW Level (post sample):	0.43 m bgl	
PSH observed:	No	
Observed Well Depth:	5.08 m bgl	
Estimated Bore Volume:	34 L	
Total Volume Purged:	L	
Equipment:	Geopump and disposable tubing	

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Redox (mV)
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10 mV**
8:39	16.4	2.83	63.51	7.71	37
8:40	16.8	2.58	65.42	7.48	35
8:41	16.8	2.6	65.73	7.39	34

Additional Readings Following stabilisation:	DO % Sat	SPC	TDS		

Sample Details

Sampling Depth (rationale):	2.5 m bgl,
Sample Appearance (e.g. colour, siltiness, odour)	Silty, no odour, clear
Sample ID:	MW4
QA/QC Samples:	
Sampling Containers and filtration:	2 x 1L glass, 2x 40mL glass vials (HCl), 1x200ml plastic (H2SO4), 1x 100mL plastic (HNO3 (filtered))
Comments / Observations:	

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Groundwater Field Sheet

Project and Bore Installation Details						
Bore / Standpipe ID:	**BH20**					
Project Name:	Due Diligence Investigation					
Project Number:	84822					
Site Location:	339 Wallgrove Road, Eastern Creek					
Bore Easting:	301254	Northing:	6255805			
Installation Date:	30/04/2015					
GW Level (during drilling):	Not observed m bgl					
Well Depth:	10 m bgl					
Screened Interval:	1.5-10 m bgl					
Contaminants/Comments:						
Bore Development Details						
Date/Time:	11/05/15; 9:26 am	13/05/15; 8:33am				
Purged By:	CB	CB				
GW Level (pre-purge):	4.49 m bgl	4.69 m bgl				
GW Level (post-purge):	6.47 m bgl	7.32 m bgl				
PSH observed:	No	No				
Observed Well Depth:	8.46 m bgl	8.51 m bgl				
Estimated Bore Volume:	28.58 L	27.5 L				
Total Volume Purged:	10.0 L (dry)	10.0 L (dry)				
Equipment:	12V Twister Pump	12V Twister Pump				

Micropurge and Sampling Details		
Date/Time:	15/05/2015	
Sampled By:	RJL	
Weather Conditions:	Clear	
GW Level (pre-purge):	4.91 m bgl	
GW Level (post sample):	6.21 m bgl	
PSH observed:	No	
Observed Well Depth:	8.51 m bgl	
Estimated Bore Volume:	26 L	
Total Volume Purged:	L	
Equipment:	Geopump and disposable tubing	

Water Quality Parameters

Time / Volume	Temp (°C)	DO (mg/L)	EC (µS or mS/cm)	pH	Redox (mV)	
Stabilisation Criteria (3 readings)	***0.1° C***	**+/- 0.3 mg/L**	**+/- 3%**	**+/- 0.1**	**+/- 10 mV**	
7:07	20.8	0.72	6619	8.25	74	
7:08	21.3	0.48	6634	8.06	72	
7:09	21.5	0.38	3360	7.92	70	
7:10	21.6	0.36	3386	7.82	69	
Additional Readings Following stabilisation:	DO % Sat	SPC	TDS			

Sample Details

Sampling Depth (rationale):	6.5 m bgl, Approximate mid section of water column
Sample Appearance (e.g. colour, siltiness, odour)	No odour, silty brown, clear
Sample ID:	MW20
QA/QC Samples:	BD1/150515
Sampling Containers and filtration:	1 x 1L glass, 1x500ml plastic, 2x 40mL glass vials (HCl), 1x200ml plastic (H2SO4), 1x 100mL plastic (HNO3 (filtered))
Comments / Observations:	

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Soil Vapour Sample Field Record

Job Details

Site Name:	Eastern Creek	Date:	26/02/20
Project Number:	84822.03	Sampling Media:	1L Summa Canister and Carbon Backup
Sample ID:	BH204	ELS Cannister ID:	3651
Sample Depth:	N/A (Gas/GW Well)	Weather:	Clear
Installation Date:	-	Flow Controller:	Regulator (canister) and 0.1 L/min rotameter and low flow adapter
SWL + Stickup	1.9m	Pump ID	868245
Purge Volume	13.7 L	Sampled by:	JJH

Purge Details

Total Volume Purged: (L) (one volume)	~14L	Equipment Used: SKC Pump	SKC Pump #868245
PID Reading (ppm) – Prior to applying IPA	0.1		

Pre-Start QA Tests

Shut In Test			
Vacuum Applied (mmHg):	-28 mmHg Canister/ -20 mmHg sample train	Duration (s)	30 Seconds
Vacuum at Completion	-7 mmHg Canister/- 20 mmHg sample train	Pass/Fail	**Pass**
Leak Test			
Tracer Compound	Isopropyl alcohol	Field Tracer Level	In shroud: 250 ppm In Sample Line: 1 ppm (after applying IPA
Pass/Fail	**Pass**		

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Soil Vapour Sample Field Record

Job Details

Site Name:	Eastern Creek	Date:	26/02/20
Project Number:	84822.03	Sampling Media:	1L Summa Canister and Carbon Backup
Sample ID:	BH213	ELS Cannister ID:	2554
Sample Depth:	N/A (Gas/GW Well)	Weather:	Clear
Installation Date:	-	Flow Controller:	Regulator (canister) and 0.1 L/min rotameter and low flow adapter
SWL + Stickup	1.55 m	Pump ID	868245
Purge Volume	11 L	Sampled by:	JJH

Purge Details

Total Volume Purged: (L) (one volume)	~11L	Equipment Used: SKC Pump	SKC Pump #868245
PID Reading (ppm) – Prior to applying IPA	0.0		

Pre-Start QA Tests

Shut In Test			
Vacuum Applied (mmHg):	-27 mmHg Canister/ -18 mmHg sample train	Duration (s)	30 Seconds
Vacuum at Completion	-7 mmHg Canister/- 18 mmHg sample train	Pass/Fail	**Pass**
Leak Test			
Tracer Compound	Isopropyl alcohol	Field Tracer Level	In shroud: 350 ppm In Sample Line: 3 ppm (after applying IPA
Pass/Fail	**Pass**		

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Soil Vapour Sample Field Record

Job Details

Site Name:	Eastern Creek	Date:	26/02/20
Project Number:	84822.03	Sampling Media:	1L Summa Canister and Carbon Backup
Sample ID:	BH4	ELS Cannister ID:	3642
Sample Depth:	N/A (Gas/GW Well)	Weather:	Clear
Installation Date:	-	Flow Controller:	Regulator (canister) and 0.1 L/min rotameter and low flow adapter
SWL + Stickup	1.2 m	Pump ID	868245
Purge Volume	8.6 L	Sampled by:	JJH

Purge Details

Total Volume Purged: (L) (one volume)	~9 L	Equipment Used: SKC Pump	SKC Pump #868245
PID Reading (ppm) – Prior to applying IPA	0.0		

Pre-Start QA Tests

Shut In Test			
Vacuum Applied (mmHg):	-28.5 mmHg Canister/ -17 mmHg sample train	Duration (s)	30 Seconds
Vacuum at Completion	-7 mmHg Canister/- 17 mmHg sample train	Pass/Fail	**Pass**
Leak Test			
Tracer Compound	Isopropyl alcohol	Field Tracer Level	In shroud: 250 ppm In Sample Line: 2 ppm (after applying IPA
Pass/Fail	**Pass**		

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Soil Vapour Sample Field Record

Job Details

Site Name:	Eastern Creek	Date:	26/02/20
Project Number:	84822.03	Sampling Media:	1L Summa Canister and Carbon Backup
Sample ID:	BH201	ELS Cannister ID:	3533 (BD1 – 3509)
Sample Depth:	N/A (Gas/GW Well)	Weather:	Clear to overcast
Installation Date:	-	Flow Controller:	Regulator (canister) and 0.1 L/min rotameter and low flow adapter
SWL + Stickup	2.4 m	Pump ID	868245
Purge Volume	17 L	Sampled by:	JJH

Purge Details

Total Volume Purged: (L) (one volume)	~17 L	Equipment Used: SKC Pump	SKC Pump #868245
PID Reading (ppm) – Prior to applying IPA	0.0		

Pre-Start QA Tests

Shut In Test			
Vacuum Applied (mmHg):	-27 / -29* mHg Canister/ -18 mmHg sample train	Duration (s)	30 Seconds
Vacuum at Completion	-7 /-3* mmHg Canister/- 18 mmHg sample train	Pass/Fail	**Pass**
Leak Test			
Tracer Compound	Isopropyl alcohol	Field Tracer Level	In shroud: 250 ppm In Sample Line: 1 ppm (after applying IPA
Pass/Fail	**Pass**	NOTES	• BD1 Taken at BH201

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Soil Vapour Sample Field Record

Job Details

Site Name:	Eastern Creek	Date:	26/02/20
Project Number:	84822.03	Sampling Media:	1L Summa Canister and Carbon Backup
Sample ID:	BH2	ELS Cannister ID:	1688
Sample Depth:	N/A (Gas/GW Well)	Weather:	Clear
Installation Date:	-	Flow Controller:	Regulator (canister) and 0.1 L/min rotameter and low flow adapter
SWL + Stickup	1.6 m	Pump ID	868245
Purge Volume	11 L	Sampled by:	JJH

Purge Details

Total Volume Purged: (L) (one volume)	~11L	Equipment Used: SKC Pump	SKC Pump #868245
PID Reading (ppm) – Prior to applying IPA	0.1		

Pre-Start QA Tests

Shut In Test			
Vacuum Applied (mmHg):	-28 mmHg Canister/ -18 mmHg sample train	Duration (s)	30 Seconds
Vacuum at Completion	-7 mmHg Canister/- 18 mmHg sample train	Pass/Fail	**Pass**
Leak Test			
Tracer Compound	Isopropyl alcohol	Field Tracer Level	In shroud: 200 ppm In Sample Line: 0.3 ppm (after applying IPA
Pass/Fail	**Pass**		

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Soil Vapour Sample Field Record

Job Details

Site Name:	Eastern Creek	Date:	09/04/2020
Project Number:	84822.03	Sampling Media:	1L Summa Canister and Carbon Backup
Sample ID:	BH201	ELS Cannister ID:	2558
Sample Depth:	N/A (Gas/GW Well)	Weather:	Overcast
Installation Date:	-	Flow Controller:	Regulator (canister) and 0.1 L/min rotameter and low flow adapter
SWL + Stickup	1.3 m	Pump ID	11529213
Purge Volume	9 L	Sampled by:	JJH

Purge Details

Total Volume Purged: (L) (one volume)	~9L	Equipment Used: SKC Pump	SKC Pump #
PID Reading (ppm) – Prior to applying IPA	0.2		

Pre-Start QA Tests

Shut In Test			
Vacuum Applied (mmHg):	-29 mmHg Canister/ -2 mmHg sample train	Duration (s)	30 Seconds
Vacuum at Completion	-7 mmHg Canister/- 15 mmHg sample train	Pass/Fail	**Pass**
Leak Test			
Tracer Compound	Isopropyl alcohol	Field Tracer Level	In shroud: 150 ppm In Sample Line: 0.6 ppm (after applying IPA
Pass/Fail	**Pass**		

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Soil Vapour Sample Field Record

Job Details

Site Name:	Eastern Creek	Date:	09/04/2020
Project Number:	84822.03	Sampling Media:	1L Summa Canister and Carbon Backup
Sample ID:	BH208	ELS Cannister ID:	3517
Sample Depth:	N/A (Gas/GW Well)	Weather:	Overcast
Installation Date:	-	Flow Controller:	Regulator (canister) and 0.1 L/min rotameter and low flow adapter
SWL + Stickup	2.8 m	Pump ID	11529213
Purge Volume	20 L	Sampled by:	JJH

Purge Details

Total Volume Purged: (L) (one volume)	~20L	Equipment Used: SKC Pump	SKC Pump #
PID Reading (ppm) – Prior to applying IPA	1		

Pre-Start QA Tests

Shut In Test			
Vacuum Applied (mmHg):	-29 mmHg Canister/ -2 mmHg sample train	Duration (s)	30 Seconds
Vacuum at Completion	-7 mmHg Canister/- 18 mmHg sample train	Pass/Fail	**Pass**
Leak Test			
Tracer Compound	Isopropyl alcohol	Field Tracer Level	In shroud: 300 ppm In Sample Line: 2 ppm (after applying IPA
Pass/Fail	**Pass**		

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Soil Vapour Sample Field Record

Job Details

Site Name:	Eastern Creek	Date:	09/04/2020
Project Number:	84822.03	Sampling Media:	1L Summa Canister and Carbon Backup
Sample ID:	BH213	ELS Cannister ID:	3282
Sample Depth:	N/A (Gas/GW Well)	Weather:	Clear
Installation Date:	-	Flow Controller:	Regulator (canister) and 0.1 L/min rotameter and low flow adapter
SWL + Stickup	1.4 m	Pump ID	11529213
Purge Volume	10 L	Sampled by:	JJH

Purge Details

Total Volume Purged: (L) (one volume)	~10 L	Equipment Used: SKC Pump	SKC Pump #
PID Reading (ppm) – Prior to applying IPA	0.0		

Pre-Start QA Tests

Shut In Test			
Vacuum Applied (mmHg):	-30mmHg Canister/ -2 mmHg sample train	Duration (s)	30 Seconds
Vacuum at Completion	-7 mmHg Canister/- 15 mmHg sample train	Pass/Fail	**Pass**
Leak Test			
Tracer Compound	Isopropyl alcohol	Field Tracer Level	In shroud: 350 ppm In Sample Line: 2 ppm (after applying IPA
Pass/Fail	**Pass**		

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Soil Vapour Sample Field Record

Job Details

Site Name:	Eastern Creek	Date:	09/04/2020
Project Number:	84822.03	Sampling Media:	1L Summa Canister and Carbon Backup
Sample ID:	BH4	ELS Cannister ID:	3289
Sample Depth:	N/A (Gas/GW Well)	Weather:	Clear to overcast
Installation Date:	-	Flow Controller:	Regulator (canister) and 0.1 L/min rotameter and low flow adapter
SWL + Stickup	1.35 m	Pump ID	11529213
Purge Volume	10 L	Sampled by:	JJH

Purge Details

Total Volume Purged: (L) (one volume)	~10 L	Equipment Used: SKC Pump	SKC Pump #
PID Reading (ppm) – Prior to applying IPA	1		

Pre-Start QA Tests

Shut In Test			
Vacuum Applied (mmHg):	-30 mHg Canister/ -2 mmHg sample train	Duration (s)	30 Seconds
Vacuum at Completion	-5 mmHg Canister/- 19 mmHg sample train	Pass/Fail	**Pass**
Leak Test			
Tracer Compound	Isopropyl alcohol	Field Tracer Level	In shroud: 450 ppm In Sample Line: 2 ppm (after applying IPA
Pass/Fail	**Pass**	NOTES	

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Soil Vapour Sample Field Record

Job Details

Site Name:	Eastern Creek	Date:	09/04/2020
Project Number:	84822.03	Sampling Media:	1L Summa Canister and Carbon Backup
Sample ID:	BH2	ELS Cannister ID:	3250
Sample Depth:	N/A (Gas/GW Well)	Weather:	Clear
Installation Date:	-	Flow Controller:	Regulator (canister) and 0.1 L/min rotameter and low flow adapter
SWL + Stickup	1.4 m	Pump ID	11529213
Purge Volume	10 L	Sampled by:	JJH

Purge Details

Total Volume Purged: (L) (one volume)	~10L	Equipment Used: SKC Pump	SKC Pump #
PID Reading (ppm) – Prior to applying IPA	0.1		

Pre-Start QA Tests

Shut In Test			
Vacuum Applied (mmHg):	-29 mmHg Canister/ -2 mmHg sample train	Duration (s)	30 Seconds
Vacuum at Completion	-7 mmHg Canister/- 18 mmHg sample train	Pass/Fail	**Pass**
Leak Test			
Tracer Compound	Isopropyl alcohol	Field Tracer Level	In shroud: 500 ppm In Sample Line: 1 ppm (after applying IPA
Pass/Fail	**Pass**		

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Soil Vapour Sample Field Record

Job Details

Site Name:	Eastern Creek	Date:	09/04/2020
Project Number:	84822.03	Sampling Media:	1L Summa Canister and Carbon Backup
Sample ID:	BH204	ELS Cannister ID:	1868
Sample Depth:	N/A (Gas/GW Well)	Weather:	Clear
Installation Date:	-	Flow Controller:	Regulator (canister) and 0.1 L/min rotameter and low flow adapter
SWL + Stickup	1.7 m	Pump ID	11529213
Purge Volume	12 L	Sampled by:	JJH

Purge Details

Total Volume Purged: (L) (one volume)	~12L	Equipment Used: SKC Pump	SKC Pump #
PID Reading (ppm) – Prior to applying IPA	0.3		

Pre-Start QA Tests

Shut In Test			
Vacuum Applied (mmHg):	-29 mmHg Canister/ -2 mmHg sample train	Duration (s)	30 Seconds
Vacuum at Completion	-7 mmHg Canister/- 19 mmHg sample train	Pass/Fail	**Pass**
Leak Test			
Tracer Compound	Isopropyl alcohol	Field Tracer Level	In shroud: 350 ppm In Sample Line: 3 ppm (after applying IPA
Pass/Fail	**Pass**		

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Landfill Gas Monitoring

Client: **Cleanaway** Date: 2/20/2020

Project: **Eastern Creek EIS** Project Number: 84822.03

Location: 339 Wallgrove Rd Atmospheric Pressure Mb: 1005

Weather/ Site Conditions: Clear Relative Borehole Pressure: 14.97 mb

Well ID: **BH201**

Time: 0920 Flow or Concentration taken first? **Flow**

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Flow (l/hr)
	CH_4	CO_2	O_2			
Initial (0)	0.0	0.1	17.3	0	7	0.8
30	0.0	5.1	9.1	0	5	1.4
60	0.0	5.0	9.0	0	5	1.3
90	0.0	5.1	9.1	0	5	0.8
120	0.0	5.2	9.0	0	5	0.6
150	0.0	5.2	9.0	0	5	0.5
180	0.0	5.4	9.0	0	5	0.4
210	0.0	5.5	9.1	0	5	0.4
240	0.0	6.0	10.1	0	4	0.4
270	0.0	5.9	12.3	0	4	0.3
300	0.0	5.7	13.2	0	4	0.2
330	0.0	5.4	13.8	0	3	0.2
360	0.0	5.2	14.3	0	3	0.2
390	0.0	5.1	14.4	0	3	0.1
420	0.0	4.7	15.1	0	2	0.1
450	0.0	4.6	15.3	0	2	0.2
480	0.0	4.5	15.4	0	2	0.1
510	0.0	4.3	15.7	0	2	0.1
540	0.0	4.2	15.8	0	2	0.1
570	0.1	4.1	15.9	0	2	0.1
600	0.1	4.0	16.0	0	2	0.1

Client: **Cleanaway** Date: 2/20/2020

Project: **Eastern Creek EIS** Project Number: 84822.03

Location: 339 Wallgrove Rd Atmospheric Pressure Mb: 1006

Weather/ Site Conditions: Clear Relative Borehole Pressure: 15.52 mb

Well ID: **BH204**

Time: 0920 Flow or Concentration taken first? **Flow**

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Flow (l/hr)
	CH_4	CO_2	O_2			
Initial (0)	0.1	0.4	17	0	5	4.5
30	0.1	4.2	8.6	0	5	7.4
60	0.1	4.2	8.4	0	4	8.5
90	0.1	4.3	8.5	0	4	7.4
120	0.1	4.3	8.5	0	5	7.4
150	0.1	4.3	8.5	0	5	7.4
180	0.1	4.3	8.5	0	5	7.3
210	0.1	4.3	8.5	0	5	7.2
240	0.1	4.3	8.5	0	5	6.3
270	0.1	4.3	8.5	0	5	5.7
300	0.1	4.3	8.4	0	5	4.7
330	0.1	4.3	8.4	0	5	4.6
360	0.1	4.3	8.5	0	5	4.4
390	0.1	4.4	8.4	0	5	4.3
420	0.1	4.3	8.4	0	5	4.2
450	0.1	4.3	8.4	0	5	4.2
480	0.1	4.3	8.4	0	5	4.1
510	0.1	4.2	8.4	0	5	4.1
540	0.1	4.2	8.4	0	5	4.0
570	0.1	4.3	8.4	0	5	4.0
600	0.1	4.3	8.4	0	5	4.0

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Landfill Gas Monitoring

Client: **Cleanaway** Date: 2/20/2020

Project: **Eastern Creek EIS** Project Number: 84822.03

Location: 339 Wallgrove Rd Atmospheric Pressure Mb: 1006

Weather/ Site Conditions: Clear Relative Borehole Pressure: -0.5 mb

Well ID: **BH2**

Time: 1045 Flow or Concentration taken first? **Flow**

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Flow (l/hr)
	CH_4	CO_2	O_2			
Initial (0)	0.1	0.4	185.0	0	8	0
30	0.1	0.5	19.2	0	2	0
60	0.1	0.2	19.3	0	1	0
90	0.1	0.1	19.4	0	1	0
120	0.1	0.1	19.4	0	1	-0.1
150	0.1	0.1	19.4	0	1	-0.1
180	0.1	0.1	19.4	0	0	-0.2
210	0.1	0.1	19.4	0	1	-0.1
240	0.1	0.1	19.3	0	0	-0.1
270	0.1	0.1	19.3	0	1	-0.2
300	0.1	0.1	19.3	0	1	-0.2
330	0.1	0.1	19.3	0	1	-0.1
360	0.1	0.1	19.3	0	0	-0.1
390	0.1	0.1	19.3	0	0	-0.1
420	0.1	0.1	19.3	0	1	-0.2
450	0.1	0.1	19.3	0	1	-0.1
480	0.1	0.1	19.3	0	1	-0.1
510	0.1	0.1	19.3	0	0	-0.1
540	0.1	0.1	19.3	0	0	-0.2
570	0.1	0.1	19.3	0	1	-0.2
600	0.1	0.1	19.3	0	1	-0.1

Client: **Cleanaway** Date: 2/20/2020

Project: **Eastern Creek EIS** Project Number: 84822.03

Location: 339 Wallgrove Rd Atmospheric Pressure Mb: 1006

Weather/ Site Conditions: Clear Relative Borehole Pressure: -0.10 mb

Well ID: **BH208**

Time: 1100 Flow or Concentration taken first? **Flow**

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Flow (l/hr)
	CH_4	CO_2	O_2			
Initial (0)	0.1	0.5	19.1	0	10	0.0
30	0.1	1.5	18.5	0	5	0.0
60	0.1	1.8	17.8	0	3	0.0
90	0.1	1.7	15.7	0	3	0.0
120	0.1	1.8	15.5	0	3	0.0
150	0.1	1.8	15.3	0	3	0.0
180	0.1	1.9	15.2	0	4	0.0
210	0.1	2.1	14.7	0	4	0.0
240	0.1	2.4	14.0	0	4	-0.1
270	0.1	2.8	13.8	0	4	-0.2
300	0.1	2.7	13.3	0	4	-0.2
330	0.1	3.1	12.8	0	4	-0.2
360	0.1	3.2	12.5	0	4	-0.2
390	0.1	3.7	11.7	0	4	-0.2
420	0.1	3.8	11.4	0	4	-0.2
450	0.1	3.7	11.4	0	4	-0.2
480	0.1	3.8	11.4	0	4	-0.2
510	0.1	3.9	11.2	0	5	-0.2
540	0.1	3.9	11.1	0	5	-0.2
570	0.1	3.9	11.0	0	5	-0.2
600	0.1	4	10.9	0	4	-0.2

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Landfill Gas Monitoring

Client: **Cleanaway** Date: 2/20/2020

Project: **Eastern Creek EIS** Project Number: 84822.03

Location: 339 Wallgrove Rd Atmospheric Pressure Mb: 1006

Weather/ Site Conditions: Clear Relative Borehole Pressure: 0.26 mb

Well ID: **BH4**

Time: 1130 Flow or Concentration taken first? **Flow**

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Flow (l/hr)
	CH_4	CO_2	O_2			
Initial (0)	0.1	0.7	18.3	0	11	0
30	0.1	1.7	15.2	0	6	0.1
60	0.1	1.7	15.2	0	5	0
90	0.1	1.6	15.4	0	4	0
120	0.1	1.5	15.6	0	4	-0.1
150	0.1	1.5	15.6	0	4	0
180	0.1	1.5	15.6	0	4	0
210	0.1	1.5	15.5	0	3	0
240	0.1	1.4	15.6	0	3	0
270	0.1	1.4	15.7	0	3	0
300	0.1	1.4	15.7	0	4	0
330	0.1	1.4	15.8	0	3	-0.1
360	0.1	1.5	15.8	0	3	0
390	0.1	1.4	15.9	0	2	0
420	0.1	1.4	16.0	0	2	0
450	0.1	1.4	16.0	0	2	0
480	0.1	1.4	16.1	0	1	0
510	0.1	1.4	16.0	0	1	0
540	0.1	1.4	16.1	0	1	0
570	0.1	1.3	16.2	0	1	0
600	0.1	1.4	16.2	0	1	0

Client: Date:

Project: Project Number:

Location: Atmospheric Pressure Mb:

Weather/ Site Conditions: Relative Borehole Pressure:

Well ID:

Time: Flow or Concentration taken first?

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Flow (l/hr)
	CH_4	CO_2	O_2			
Initial (0)						
30						
60						
90						
120						
150						
180						
210						
240						
270						
300						
330						
360						
390						
420						
450						
480						
510						
540						
570						
600						

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Landfill Gas Monitoring

Client: **Cleanaway** Date: 2/26/2020

Project: **Eastern Creek EIS** Project Number: 84822.03

Location: 339 Wallgrove Rd Atmospheric Pressure Mb: 1000

Weather/ Site Conditions: Clear Relative Borehole Pressure: - 0.36 mb

Well ID: **BH208**

Time: Flow or Concentration taken first? **Flow**

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Flow (l/hr)
	CH_4	CO_2	O_2			
Initial (0)	0.2	0.0	19.1	0	10	0.1
30	0.2	0.9	16.5	0	6	0.1
60	0.2	1.2	15.5	0	6	0.2
90	0.2	1.4	15.1	0	6	0.1
120	0.2	1.8	13.9	0	6	0.1
150	0.2	1.7	12.0	0	6	0.1
180	0.2	1.3	11.9	0	6	0.1
210					6	
240						
270						
300						
330						
360						
390						
420						
450						
480						
510						
540						
570						
600						

Client: **Cleanaway** Date: 2/26/2020

Project: **Eastern Creek EIS** Project Number: 84822.03

Location: 339 Wallgrove Rd Atmospheric Pressure Mb: 1001

Weather/ Site Conditions: Clear Relative Borehole Pressure: 0.2 mb

Well ID: **BH204**

Time: Flow or Concentration taken first? **Flow**

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Flow (l/hr)
	CH_4	CO_2	O_2			
Initial (0)	0.1	0	18.8	0	4	0.1
30	0.1	0.3	18.4	0	2	0.0
60	0.1	0.3	18.3	0	1	-0.2
90	0.1	0.3	18.2	0	1	0.2
120	0.1	0.3	18.2	0	1	-0.2
150						
180						
210						
240						
270						
300						
330						
360						
390						
420						
450						
480						
510						
540						
570						
600						

Note: Due to sampling, only measured values until approximately stabilised

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Landfill Gas Monitoring

Client: **Cleanaway** Date: 2/26/2020

Project: **Eastern Creek EIS** Project Number: 84822.03

Location: 339 Wallgrove Rd Atmospheric Pressure Mb: 1002

Weather/ Site Conditions: Clear Relative Borehole Pressure: -0.07 mb

Well ID: **BH213**

Time: Flow or Concentration taken first? **Flow**

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Flow (l/hr)
	CH_4	CO_2	O_2			
Initial (0)	0.0	0.1	19.5	0	0	0.1
30	0.0	0.3	19.2	0	0	0
60	0.0	0.2	19.3	0	0	0
90	0.0	0.2	19.2	0	0	0
120						0
150						0
180						
210						
240						
270						
300						
330						
360						
390						
420						
450						
480						
510						
540						
570						
600						

Client: **Cleanaway** Date: 2/26/2020

Project: **Eastern Creek EIS** Project Number: 84822.03

Location: 339 Wallgrove Rd Atmospheric Pressure Mb: 1001

Weather/ Site Conditions: Clear Relative Borehole Pressure: -5.8 mb

Well ID: **BH4**

Time: Flow or Concentration taken first? **Flow**

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Flow (l/hr)
	CH_4	CO_2	O_2			
Initial (0)	0.1	0	18.8	0	2	0.0
30	0.1	0.2	18.5	0	0	0.0
60	0.1	0.1	18.6	0	0	-0.1
90	0.1	0.1	18.6	0	0	0.0
120	0.1	0.1	18.6	0	0	-0.1
150						
180						
210						
240						
270						
300						
330						
360						
390						
420						
450						
480						
510						
540						
570						
600						

Note: Due to sampling, only measured values until approximately stabilised

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Landfill Gas Monitoring

Client: **Cleanaway** Date: 2/26/2020

Project: **Eastern Creek EIS** Project Number: 84822.03

Location: 339 Wallgrove Rd Atmospheric Pressure Mb: 1000

Weather/ Site Conditions: Clear Relative Borehole Pressure: 0.02 mb

Well ID: **BH201**

Time: Flow or Concentration taken first? **Flow**

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Flow (l/hr)
	CH_4	CO_2	O_2			
Initial (0)	0.1	0.1	1.3	0	11	0.1
30	0.1	1.7	16.1	0	6	0
60	0.1	1.7	15.9	0	4	0.1
90	0.1	1.8	15.8	0	4	0.1
120	0.1	1.9	15.7	0	4	0.1
150						
180						
210						
240						
270						
300						
330						
360						
390						
420						
450						
480						
510						
540						
570						
600						

Client: **Cleanaway** Date: 2/26/2020

Project: **Eastern Creek EIS** Project Number: 84822.03

Location: 339 Wallgrove Rd Atmospheric Pressure Mb: 1001

Weather/ Site Conditions: Relative Borehole Pressure: 0.6 mb

Well ID: **BH2**

Time: Flow or Concentration taken first? **Flow**

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Flow (l/hr)
	CH_4	CO_2	O_2			
Initial (0)	0.1	0.3	19.2	0	1	0.0
30	0.1	0.3	19.0	0	0	0.0
60	0.1	0.3	19.0	0	0	-0.1
90	0.1	0.2	19.0	0	0	-0.1
120	0.1	0.2	19.0	0	0	-0.1
150						
180						
210						
240						
270						
300						
330						
360						
390						
420						
450						
480						
510						
540						
570						
600						

Note: Due to sampling, only measured values until approximately stabilised

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Landfill Gas Monitoring

Client: **Cleanaway** Date: 4/9/2020
Project: **Eastern Creek EIS** Project Number: 84822.03
Location: 339 Wallgrove Rd Atmospheric Pressure Mb: 1019
Weather/ Site Conditions: Clear Relative Borehole Pressure: 3.4 mb
Well ID: **BH208**
Time: Flow or Concentration taken first? **Flow**

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Flow (l/hr)
	CH_4	CO_2	O_2			
Initial (0)	0.0	0.2	20.8	0	0	0
30	0.0	4.7	14.3	0	0	0
60	0.0	3.8	15.4	0	0	0.1
90	0.0	3.2	16.2	0	0	0.1
120	0.0	2.8	16.6	0	0	0.1
150						
180						
210						
240						
270						
300						
330						
360						
390						
420						
450						
480						
510						
540						
570						
600						

Client: **Cleanaway** Date: 4/9/2020
Project: **Eastern Creek EIS** Project Number: 84822.03
Location: 339 Wallgrove Rd Atmospheric Pressure Mb: 1022
Weather/ Site Conditions: Clear Relative Borehole Pressure: 0.07 mb
Well ID: **BH204**
Time: Flow or Concentration taken first? **Flow**

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Flow (l/hr)
	CH4	CO_2	O_2			
Initial (0)	0.2	0.2	20.5	0	0	0.0
30	0.2	1.7	19.5	0	0	0.0
60	0.2	1.6	19.5	0	0	0.0
90	0.2	1.5	19.6	0	0	0.0
120	0.2	1.3	19.7	0	0	0.0
150						
180						
210						
240						
270						
300						
330						
360						
390						
420						
450						
480						
510						
540						
570						
600						

Note: Due to sampling, only measured values until approximately stabilised

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Landfill Gas Monitoring

Client: **Cleanaway** Date: 4/9/2020

Project: **Eastern Creek EIS** Project Number: 84822.03

Location: 339 Wallgrove Rd Atmospheric Pressure Mb: 1020

Weather/ Site Conditions: Clear Relative Borehole Pressure: 0.10 mb

Well ID: **BH213**

Time: Flow or Concentration taken first? **Flow**

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Flow (l/hr)
	CH_4	CO_2	O_2			
Initial (0)	0.0	0.1	20.3	0	0	0.1
30	0.0	0.8	19.9	0	0	0.1
60	0.0	0.6	20.0	0	0	0.1
90	0.0	0.5	20.0	0	0	0.1
120	0.0	0.4	20.0	0	0	0.1
150						
180						
210						
240						
270						
300						
330						
360						
390						
420						
450						
480						
510						
540						
570						
600						

Client: **Cleanaway** Date: 2/26/2020

Project: **Eastern Creek EIS** Project Number: 84822.03

Location: 339 Wallgrove Rd Atmospheric Pressure Mb: 1021

Weather/ Site Conditions: Clear Relative Borehole Pressure: 0.03 mb

Well ID: **BH4**

Time: Flow or Concentration taken first? **Flow**

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Flow (l/hr)
	CH_4	CO_2	O_2			
Initial (0)	0	0.1	20.2	0	0	0.1
30	0	5.6	15.3	0	0	0.1
60	0	5.7	15.3	0	0	0.1
90	0	5.7	15.2	0	0	0.1
120	0	5.7	15.2	0	0	0.1
150						
180						
210						
240						
270						
300						
330						
360						
390						
420						
450						
480						
510						
540						
570						
600						

Note: Due to sampling, only measured values until approximately stabilised

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Landfill Gas Monitoring

Client: **Cleanaway** Date: 4/9/2020
Project: **Eastern Creek EIS** Project Number: 84822.03
Location: 339 Wallgrove Rd Atmospheric Pressure Mb: 0.23
Weather/ Site Conditions: Clear Relative Borehole Pressure: 1.27 mb
Well ID: **BH201**
Time: Flow or Concentration taken first? **Flow**

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Flow (l/hr)
	CH_4	CO_2	O_2			
Initial (0)	0.1	3.2	19.1	0	0	0
30	0.0	3.6	17.6	0	0	0
60	0.0	3.7	17.5	0	0	0
90	0.0	4.1	17.3	0	0	0
120	0.0	4.3	17.0	0	0	0
150						
180						
210						
240						
270						
300						
330						
360						
390						
420						
450						
480						
510						
540						
570						
600						

Client: **Cleanaway** Date: 4/9/2020
Project: **Eastern Creek EIS** Project Number: 84822.03
Location: 339 Wallgrove Rd Atmospheric Pressure Mb: 1021
Weather/ Site Conditions: Relative Borehole Pressure: 0.07 mb
Well ID: **BH2**
Time: Flow or Concentration taken first? **Flow**

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Flow (l/hr)
	CH_4	CO_2	O_2			
Initial (0)	0	0.2	20.7	0	0	0.0
30	0	0.3	20.6	0	0	0.0
60	0	0.2	20.6	0	0	0.0
90	0	0.2	20.6	0	0	0.0
120	0	0.1	20.6	0	0	0.0
150						
180						
210						
240						
270						
300						
330						
360						
390						
420						
450						
480						
510						
540						
570						
600						

Note: Due to sampling, only measured values until approximately stabilised

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Landfill Gas Monitoring

Client:
Project:
Location:
Well ID: BH4
Time: 0900
Temperature: ~20

Date: 20.9.19
Project Number: 84822.02

Pressure Mb: 1021

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Bal (%)	Relative (mb)	Flow (l/h)
	CH_4	CO_2	O_2					
0	0.1	0.2	20.5	0	0	79.1	-0.19	0.1
30	0.1	0.5	19.9	0	0	79.6	-0.15	0.1
60	0	0.2	20.3	0	0	79.4	-0.15	0.1
90	0.1	0.2	20.1	0	0	79.7	-0.15	0.1
120	0	0.2	20.1	0	0	79.7	-0.15	0.1
150	0	0.2	20.0	0	0	79.8	-0.15	0.1
180	0.1	0.2	20.0	0	0	79.8	-0.15	0.1
210	0	0.2	20.0	0	0	79.8	-0.15	0.1
240	0.1	0.2	19.9	0	0	79.9	-0.15	0.1
270	0	0.2	19.9	0	0	79.9	-0.15	0.1
300	0.1	0.2	19.9	0	0	79.9	-0.15	0.1

water
~0.1 bgl
=0.9m in stickup
=6.5L air

Well ID:	BH213		
Date:	20.9.19	Well Base:	4.5m (water 1.65)
Time:		Pressure Mb:	1020

17.6L air purge

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Bal (%)	Relative (mb)	Flow (l/h)
	CH_4	CO_2	O_2					
0	0	0.1	20.1	0	10	79.3	-0.05	0.2
30	0	1	19.7	0	14	79.3	-0.05	0.5
60	0	1.2	19.6	0	16	79.2	-0.05	0.7
90	0	1.7	19.4	0	18	78.9	-0.05	0.8
120	0	2.1	19.2	0	21	78.7	-0.05	0.8
150	0	2.2	19.1	0	21	78.6	-0.05	0.9
180	0	2.2	19.1	0	21	78.6	-0.05	0.9
210	0	2.3	19.1	0	22	78.1	-0.05	0.9
240	0	2.22	19.1	0	5	79.9		0.9
270	0	0.4	19.8	0	9	79.7		0.9
300	0	0.6	19.7	0	10	79.5		0.9

Restart pump

Well ID:	BH62		
Date:		Well Base:	10.05 (water 0.85m)
Time:	1730	Pressure Mb:	1018

1.6x 7.1L purge
(inc stickup 0.8)

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Bal (%)	Relative (mb)	Flow (l/h)
	CH_4	CO_2	O_2					
0	0	2.1	19.4	0	4	78.7	0.03	0.1
30	0	1.8	19.4	0	4	78.9	0.03	0.1
60	0	1.4	19.6	0	4	79.0		0.0
90	0	1.3	19.6	0	4	79.1		0.0
120	0	1.2	19.7	0	4	79.1		0.0
150	0	1.1	19.7	0	4	79.2		[illegible]
180	0	0.9	19.9	0	4	79.2		0.0
210	0	0.8	19.9	0	4	79.3		0.1
240	0	0.8	19.9	0	4	79.3		0.0
270	0	0.7	20.0	0	4	79.3		0.0
300	0	0.7	20.0	0	4	79.3		0.1

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Landfill Gas Monitoring

Client:
Project:
Location:
Well ID: BH204
Time: 1400
Temperature:

Date: 20.9.19
Project Number: 84822.02

Pressure Mb: 1018

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Bal (%)	Relative (mb)	Flow (l/h)
	CH_4	CO_2	O_2					
0	0	1.1	19.8	0	107	79.2	0.12	0.2
30	0	1.1	19.6	0	124	79.3		0.2
60	0	1.3	19.4	0	141	79.2		0.2
90	0	2.2	18.7	0	186	78.9		0.2
120	0	2.8	18.4	0	211	78.8		0.2
150	0	2.9	18.4	0	218	78.7		0.2
180	0	3.0	18.3	0	225	78.7		0.1
210	0	3.2	18.1	0	238	78.6		0.2
240	0	3.4	18.0	0	252	78.6		0.2
270	0	3.6	18.0	0	266	78.5		0.2
300	0	3.6	17.8	0	268	78.5		0.2

1.5 L purge
8m (1.3 water)
0.8 stickup

Well ID: BH208
Date: 24.9.19
Time: 0800
Well Base: 10m
Pressure Mb: 1023

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Bal (%)	Relative (mb)	Flow (l/h)
	CH_4	CO_2	O_2					
0	0.0	1.4	19.2	1200	130	79.1	0.17	0.8
30	0.0	1.5	19.3	0	149	79.1	0.17	1.0
60	0.0	1.6	19.3	0	155	79.1	0.17	1.1
90	0.0	1.7	19.2	0	159	79.0	0.17	1.1
120	0.0	1.9	19.1	0	167	78.9	0.17	1.1
150	0.0	2.1	19.0	0	178	78.9	0.17	1.1
180	0.0	2.2	18.9	0	183	78.9	0.17	1.1
210	0.0	2.3	18.8	0	189	78.9	0.17	1.1
240	0.0	2.3	18.8	0	194	78.9	0.17	1.1
270	0.0	2.4	18.8	0	200	78.8	0.17	1.1
300	0.0	2.5	18.7	0	207	78.8	0.17	1.1

water
3m BGL
+0.55m stickup
25.5 L

* mmHg - start 27

Well ID: BH201
Date: 24/09/19
Time: 10:15 AM
Well Base: 5.4m
Pressure Mb:

Time (sec)	Concentration (% v/v)			H_2S (ppm)	CO (ppm)	Bal (%)	Relative (mb)	Flow (l/h)
	CH_4	CO_2	O_2					
0	0.0	1.4	18.1	1	9	80.6	-0.02	0.3
30	0.0	1.5	17.8	1	10	80.7	-0.02	0.3
60	0.0	1.5	17.8	1	10	80.7	-0.02	0.3
90	0.0	1.5	17.7	1	10	80.8	-0.02	0.3
120	0.0	1.5	17.6	1	10	80.9	-0.02	0.2
150	0.0	1.7	17.3	1	11	81.0	-0.02	0.2
180	0.0	1.9	17.0	1	11	81.2	-0.02	0.2
210	0.0	2.0	16.9	1	12	81.1	-0.02	0.2
240	0.0	2.2	16.5	1	13	81.3	-0.02	0.2
270	0.0	2.1	16.6	1	12	81.2	-0.02	0.2
300	0.0	2.0	16.7	1	12	81.3	-0.02	0.2

water 4.8
4.8 + 0.65
= 5.45m air
= 39 L

Table 22: Methane Gas Results

Sample ID	Gas Analysis				
	Sample Date	Time (T) in minutes	Initial Atmospheric Pressure (mb)	% Methane	% Carbon Dioxide
BH2	5/15/2015	Initial (T=0)	1024	0.1	6.3
		2		0	5.2
		4		0	4.4
		6		0	3.7
		8		0	3.2
		10		0	2.7
BH4	5/15/2015	Initial (T=0)	1023	0	8.7
		2		0	6.7
		4		0	5.3
		6		0	4.3
		8		0	3.5
		10		0	2.7
BH20	5/15/2015	Initial (T=0)	1022	0	2.1
		2		0	1.5
		4		0	1.5
		6		0	1.6
		8		0	1.7
		10		0	1.7

Appendix G

Summary Laboratory Results Tables

and Statistical Analysis

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.17/05/2020 9:11:39 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

F2

General Statistics

Total Number of Observations	110	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	50	Mean	53.36
Maximum	420	Median	50
SD	35.28	Std. Error of Mean	3.364
Coefficient of Variation	0.661	Skewness	10.49

Normal GOF Test

Shapiro Wilk Test Statistic	0.096	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	0	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.529	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0848	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	58.94	95% Adjusted-CLT UCL (Chen-1995)	62.49
		95% Modified-t UCL (Johnson-1978)	59.5

Gamma GOF Test

A-D Test Statistic	9.091E+28	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.752	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.536	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.0868	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	11.09	k star (bias corrected MLE)	10.79
Theta hat (MLE)	4.811	Theta star (bias corrected MLE)	4.944
nu hat (MLE)	2440	nu star (bias corrected)	2375
MLE Mean (bias corrected)	53.36	MLE Sd (bias corrected)	16.24
		Approximate Chi Square Value (0.05)	2263
Adjusted Level of Significance	0.0478	Adjusted Chi Square Value	2261

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	56.01	95% Adjusted Gamma UCL (use when n<50)	56.05

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.096	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk P Value	0	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.529	**Lilliefors Lognormal GOF Test**

55	5% Lilliefors Critical Value					0.0848	Data Not Lognormal at 5% Significance Level					
56	**Data Not Lognormal at 5% Significance Level**											
57												
58	**Lognormal Statistics**											
59	Minimum of Logged Data					3.912	Mean of logged Data					3.931
60	Maximum of Logged Data					6.04	SD of logged Data					0.203
61												
62	**Assuming Lognormal Distribution**											
63	95% H-UCL					53.79	90% Chebyshev (MVUE) UCL					55.08
64	95% Chebyshev (MVUE) UCL					56.46	97.5% Chebyshev (MVUE) UCL					58.37
65	99% Chebyshev (MVUE) UCL					62.14						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	**Data do not follow a Discernible Distribution (0.05)**											
69												
70	**Nonparametric Distribution Free UCLs**											
71	95% CLT UCL					58.9	95% Jackknife UCL					N/A
72	95% Standard Bootstrap UCL					N/A	95% Bootstrap-t UCL					N/A
73	95% Hall's Bootstrap UCL					N/A	95% Percentile Bootstrap UCL					N/A
74	95% BCA Bootstrap UCL					N/A						
75	90% Chebyshev(Mean, Sd) UCL					63.45	95% Chebyshev(Mean, Sd) UCL					68.03
76	97.5% Chebyshev(Mean, Sd) UCL					74.37	99% Chebyshev(Mean, Sd) UCL					86.83
77												
78	**Suggested UCL to Use**											
79	95% Student's-t UCL					58.94	or 95% Modified-t UCL					59.5
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												
86												
87	**B(a)P**											
88												
89	**General Statistics**											
90	Total Number of Observations					103	Number of Distinct Observations					20
91							Number of Missing Observations					0
92	Minimum					0.05	Mean					0.275
93	Maximum					3.4	Median					0.05
94	SD					0.559	Std. Error of Mean					0.0551
95	Coefficient of Variation					2.031	Skewness					3.951
96												
97	**Normal GOF Test**											
98	Shapiro Wilk Test Statistic					0.458	**Shapiro Wilk GOF Test**					
99	5% Shapiro Wilk P Value					0	Data Not Normal at 5% Significance Level					
100	Lilliefors Test Statistic					0.343	**Lilliefors GOF Test**					
101	5% Lilliefors Critical Value					0.0876	Data Not Normal at 5% Significance Level					
102	**Data Not Normal at 5% Significance Level**											
103												
104	**Assuming Normal Distribution**											
105	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
106	95% Student's-t UCL					0.367	95% Adjusted-CLT UCL (Chen-1995)					0.389
107							95% Modified-t UCL (Johnson-1978)					0.37
108												

109	**Gamma GOF Test**											
110					A-D Test Statistic	13.23	**Anderson-Darling Gamma GOF Test**					
111					5% A-D Critical Value	0.802	Data Not Gamma Distributed at 5% Significance Level					
112					K-S Test Statistic	0.299	**Kolmogorov-Smirnov Gamma GOF Test**					
113					5% K-S Critical Value	0.0926	Data Not Gamma Distributed at 5% Significance Level					
114	**Data Not Gamma Distributed at 5% Significance Level**											
115												
116	**Gamma Statistics**											
117					k hat (MLE)	0.679	k star (bias corrected MLE)	0.665				
118					Theta hat (MLE)	0.406	Theta star (bias corrected MLE)	0.414				
119					nu hat (MLE)	139.8	nu star (bias corrected)	137				
120					MLE Mean (bias corrected)	0.275	MLE Sd (bias corrected)	0.337				
121							Approximate Chi Square Value (0.05)	111				
122					Adjusted Level of Significance	0.0477	Adjusted Chi Square Value	110.7				
123												
124	**Assuming Gamma Distribution**											
125				95% Approximate Gamma UCL (use when n>=50))		0.34	95% Adjusted Gamma UCL (use when n<50)	0.341				
126												
127	**Lognormal GOF Test**											
128					Shapiro Wilk Test Statistic	0.725	**Shapiro Wilk Lognormal GOF Test**					
129					5% Shapiro Wilk P Value	0	Data Not Lognormal at 5% Significance Level					
130					Lilliefors Test Statistic	0.314	**Lilliefors Lognormal GOF Test**					
131					5% Lilliefors Critical Value	0.0876	Data Not Lognormal at 5% Significance Level					
132	**Data Not Lognormal at 5% Significance Level**											
133												
134	**Lognormal Statistics**											
135					Minimum of Logged Data	-2.996	Mean of logged Data	-2.185				
136					Maximum of Logged Data	1.224	SD of logged Data	1.147				
137												
138	**Assuming Lognormal Distribution**											
139					95% H-UCL	0.283	90% Chebyshev (MVUE) UCL	0.306				
140					95% Chebyshev (MVUE) UCL	0.348	97.5% Chebyshev (MVUE) UCL	0.405				
141					99% Chebyshev (MVUE) UCL	0.518						
142												
143	**Nonparametric Distribution Free UCL Statistics**											
144	**Data do not follow a Discernible Distribution (0.05)**											
145												
146	**Nonparametric Distribution Free UCLs**											
147					95% CLT UCL	0.366	95% Jackknife UCL	0.367				
148					95% Standard Bootstrap UCL	0.366	95% Bootstrap-t UCL	0.413				
149					95% Hall's Bootstrap UCL	0.388	95% Percentile Bootstrap UCL	0.37				
150					95% BCA Bootstrap UCL	0.389						
151					90% Chebyshev(Mean, Sd) UCL	0.44	95% Chebyshev(Mean, Sd) UCL	0.515				
152					97.5% Chebyshev(Mean, Sd) UCL	0.619	99% Chebyshev(Mean, Sd) UCL	0.823				
153												
154	**Suggested UCL to Use**											
155					95% Chebyshev (Mean, Sd) UCL	0.515						
156												
157	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
158	Recommendations are based upon data size, data distribution, and skewness.											
159	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
160	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
161												
162												

163	**Chromium**											
164												
165	**General Statistics**											
166						Total Number of Observations	126				Number of Distinct Observations	34	
167											Number of Missing Observations	0
168						Minimum	1				Mean	20.53
169						Maximum	200				Median	16
170						SD	22.28				Std. Error of Mean	1.985
171						Coefficient of Variation	1.085				Skewness	5.226
172												
173	**Normal GOF Test**											
174						Shapiro Wilk Test Statistic	0.502				**Shapiro Wilk GOF Test**	
175						5% Shapiro Wilk P Value	0				Data Not Normal at 5% Significance Level	
176						Lilliefors Test Statistic	0.317				**Lilliefors GOF Test**	
177						5% Lilliefors Critical Value	0.0793				Data Not Normal at 5% Significance Level	
178	**Data Not Normal at 5% Significance Level**											
179												
180	**Assuming Normal Distribution**											
181						**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**	
182						95% Student's-t UCL	23.82				95% Adjusted-CLT UCL (Chen-1995)	24.78
183											95% Modified-t UCL (Johnson-1978)	23.97
184												
185	**Gamma GOF Test**											
186						A-D Test Statistic	7.79				**Anderson-Darling Gamma GOF Test**	
187						5% A-D Critical Value	0.764				Data Not Gamma Distributed at 5% Significance Level	
188						K-S Test Statistic	0.223				**Kolmogorov-Smirnov Gamma GOF Test**	
189						5% K-S Critical Value	0.0837				Data Not Gamma Distributed at 5% Significance Level	
190	**Data Not Gamma Distributed at 5% Significance Level**											
191												
192	**Gamma Statistics**											
193						k hat (MLE)	2.195				k star (bias corrected MLE)	2.148
194						Theta hat (MLE)	9.353				Theta star (bias corrected MLE)	9.558
195						nu hat (MLE)	553.2				nu star (bias corrected)	541.3
196						MLE Mean (bias corrected)	20.53				MLE Sd (bias corrected)	14.01
197											Approximate Chi Square Value (0.05)	488.4
198						Adjusted Level of Significance	0.0481				Adjusted Chi Square Value	487.8
199												
200	**Assuming Gamma Distribution**											
201						95% Approximate Gamma UCL (use when n>=50))	22.76				95% Adjusted Gamma UCL (use when n<50)	22.79
202												
203	**Lognormal GOF Test**											
204						Shapiro Wilk Test Statistic	0.912				**Shapiro Wilk Lognormal GOF Test**	
205						5% Shapiro Wilk P Value	6.662E-10				Data Not Lognormal at 5% Significance Level	
206						Lilliefors Test Statistic	0.164				**Lilliefors Lognormal GOF Test**	
207						5% Lilliefors Critical Value	0.0793				Data Not Lognormal at 5% Significance Level	
208	**Data Not Lognormal at 5% Significance Level**											
209												
210	**Lognormal Statistics**											
211						Minimum of Logged Data	0				Mean of logged Data	2.777
212						Maximum of Logged Data	5.298				SD of logged Data	0.64
213												
214	**Assuming Lognormal Distribution**											
215						95% H-UCL	22.01				90% Chebyshev (MVUE) UCL	23.37
216						95% Chebyshev (MVUE) UCL	25.03				97.5% Chebyshev (MVUE) UCL	27.34

217				99% Chebyshev (MVUE) UCL		31.88						
218												
219	**Nonparametric Distribution Free UCL Statistics**											
220	**Data do not follow a Discernible Distribution (0.05)**											
221												
222	**Nonparametric Distribution Free UCLs**											
223				95% CLT UCL		23.8				95% Jackknife UCL		23.82
224				95% Standard Bootstrap UCL		23.89				95% Bootstrap-t UCL		25.76
225				95% Hall's Bootstrap UCL		27.35				95% Percentile Bootstrap UCL		24.01
226				95% BCA Bootstrap UCL		25.21						
227				90% Chebyshev(Mean, Sd) UCL		26.49				95% Chebyshev(Mean, Sd) UCL		29.18
228				97.5% Chebyshev(Mean, Sd) UCL		32.93				99% Chebyshev(Mean, Sd) UCL		40.28
229												
230	**Suggested UCL to Use**											
231				95% Chebyshev (Mean, Sd) UCL		29.18						
232												
233	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
234	Recommendations are based upon data size, data distribution, and skewness.											
235	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
236	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
237												
238												
239	**Copper**											
240												
241	**General Statistics**											
242				Total Number of Observations		126				Number of Distinct Observations		57
243										Number of Missing Observations		0
244				Minimum		5				Mean		43.15
245				Maximum		530				Median		24
246				SD		67.72				Std. Error of Mean		6.033
247				Coefficient of Variation		1.569				Skewness		5.129
248												
249	**Normal GOF Test**											
250				Shapiro Wilk Test Statistic		0.442				**Shapiro Wilk GOF Test**		
251				5% Shapiro Wilk P Value		0				Data Not Normal at 5% Significance Level		
252				Lilliefors Test Statistic		0.29				**Lilliefors GOF Test**		
253				5% Lilliefors Critical Value		0.0793				Data Not Normal at 5% Significance Level		
254	**Data Not Normal at 5% Significance Level**											
255												
256	**Assuming Normal Distribution**											
257				**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**		
258				95% Student's-t UCL		53.15				95% Adjusted-CLT UCL (Chen-1995)		56.02
259										95% Modified-t UCL (Johnson-1978)		53.61
260												
261	**Gamma GOF Test**											
262				A-D Test Statistic		8.554				**Anderson-Darling Gamma GOF Test**		
263				5% A-D Critical Value		0.774				Data Not Gamma Distributed at 5% Significance Level		
264				K-S Test Statistic		0.203				**Kolmogorov-Smirnov Gamma GOF Test**		
265				5% K-S Critical Value		0.0845				Data Not Gamma Distributed at 5% Significance Level		
266	**Data Not Gamma Distributed at 5% Significance Level**											
267												
268	**Gamma Statistics**											
269				k hat (MLE)		1.361				k star (bias corrected MLE)		1.334
270				Theta hat (MLE)		31.71				Theta star (bias corrected MLE)		32.35

271					nu hat (MLE)	342.9					nu star (bias corrected)	336.1
272					MLE Mean (bias corrected)	43.15					MLE Sd (bias corrected)	37.36
273											Approximate Chi Square Value (0.05)	294.6
274					Adjusted Level of Significance	0.0481					Adjusted Chi Square Value	294.2
275												
276	**Assuming Gamma Distribution**											
277					95% Approximate Gamma UCL (use when n>=50))	49.23					95% Adjusted Gamma UCL (use when n<50)	49.3
278												
279	**Lognormal GOF Test**											
280					Shapiro Wilk Test Statistic	0.917	**Shapiro Wilk Lognormal GOF Test**					
281					5% Shapiro Wilk P Value	4.8827E-9	Data Not Lognormal at 5% Significance Level					
282					Lilliefors Test Statistic	0.139	**Lilliefors Lognormal GOF Test**					
283					5% Lilliefors Critical Value	0.0793	Data Not Lognormal at 5% Significance Level					
284	**Data Not Lognormal at 5% Significance Level**											
285												
286	**Lognormal Statistics**											
287					Minimum of Logged Data	1.609					Mean of logged Data	3.354
288					Maximum of Logged Data	6.273					SD of logged Data	0.761
289												
290	**Assuming Lognormal Distribution**											
291					95% H-UCL	43.79					90% Chebyshev (MVUE) UCL	46.85
292					95% Chebyshev (MVUE) UCL	50.8					97.5% Chebyshev (MVUE) UCL	56.28
293					99% Chebyshev (MVUE) UCL	67.05						
294												
295	**Nonparametric Distribution Free UCL Statistics**											
296	**Data do not follow a Discernible Distribution (0.05)**											
297												
298	**Nonparametric Distribution Free UCLs**											
299					95% CLT UCL	53.07					95% Jackknife UCL	53.15
300					95% Standard Bootstrap UCL	53.16					95% Bootstrap-t UCL	59.65
301					95% Hall's Bootstrap UCL	61.39					95% Percentile Bootstrap UCL	53.37
302					95% BCA Bootstrap UCL	57.29						
303					90% Chebyshev(Mean, Sd) UCL	61.25					95% Chebyshev(Mean, Sd) UCL	69.45
304					97.5% Chebyshev(Mean, Sd) UCL	80.83					99% Chebyshev(Mean, Sd) UCL	103.2
305												
306	**Suggested UCL to Use**											
307					95% Chebyshev (Mean, Sd) UCL	69.45						
308												
309	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
310	Recommendations are based upon data size, data distribution, and skewness.											
311	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
312	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
313												
314												
315	**Lead**											
316												
317	**General Statistics**											
318					Total Number of Observations	126					Number of Distinct Observations	63
319											Number of Missing Observations	0
320					Minimum	1					Mean	76.08
321					Maximum	3700					Median	24.5
322					SD	332.4					Std. Error of Mean	29.62
323					Coefficient of Variation	4.37					Skewness	10.55
324												

325	**Normal GOF Test**											
326				Shapiro Wilk Test Statistic		0.186	**Shapiro Wilk GOF Test**					
327				5% Shapiro Wilk P Value		0	Data Not Normal at 5% Significance Level					
328				Lilliefors Test Statistic		0.411	**Lilliefors GOF Test**					
329				5% Lilliefors Critical Value		0.0793	Data Not Normal at 5% Significance Level					
330	**Data Not Normal at 5% Significance Level**											
331												
332	**Assuming Normal Distribution**											
333	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
334				95% Student's-t UCL		125.2	95% Adjusted-CLT UCL (Chen-1995)					154.5
335							95% Modified-t UCL (Johnson-1978)					129.8
336												
337	**Gamma GOF Test**											
338				A-D Test Statistic		13.02	**Anderson-Darling Gamma GOF Test**					
339				5% A-D Critical Value		0.807	Data Not Gamma Distributed at 5% Significance Level					
340				K-S Test Statistic		0.243	**Kolmogorov-Smirnov Gamma GOF Test**					
341				5% K-S Critical Value		0.0867	Data Not Gamma Distributed at 5% Significance Level					
342	**Data Not Gamma Distributed at 5% Significance Level**											
343												
344	**Gamma Statistics**											
345				k hat (MLE)		0.627	k star (bias corrected MLE)					0.618
346				Theta hat (MLE)		121.3	Theta star (bias corrected MLE)					123.2
347				nu hat (MLE)		158.1	nu star (bias corrected)					155.6
348				MLE Mean (bias corrected)		76.08	MLE Sd (bias corrected)					96.81
349							Approximate Chi Square Value (0.05)					127.8
350				Adjusted Level of Significance		0.0481	Adjusted Chi Square Value					127.5
351												
352	**Assuming Gamma Distribution**											
353				95% Approximate Gamma UCL (use when n>=50))		92.65	95% Adjusted Gamma UCL (use when n<50)					92.86
354												
355	**Lognormal GOF Test**											
356				Shapiro Wilk Test Statistic		0.937	**Shapiro Wilk Lognormal GOF Test**					
357				5% Shapiro Wilk P Value		7.4675E-6	Data Not Lognormal at 5% Significance Level					
358				Lilliefors Test Statistic		0.159	**Lilliefors Lognormal GOF Test**					
359				5% Lilliefors Critical Value		0.0793	Data Not Lognormal at 5% Significance Level					
360	**Data Not Lognormal at 5% Significance Level**											
361												
362	**Lognormal Statistics**											
363				Minimum of Logged Data		0	Mean of logged Data					3.353
364				Maximum of Logged Data		8.216	SD of logged Data					1.057
365												
366	**Assuming Lognormal Distribution**											
367				95% H-UCL		61.8	90% Chebyshev (MVUE) UCL					66.85
368				95% Chebyshev (MVUE) UCL		74.63	97.5% Chebyshev (MVUE) UCL					85.44
369				99% Chebyshev (MVUE) UCL		106.7						
370												
371	**Nonparametric Distribution Free UCL Statistics**											
372	**Data do not follow a Discernible Distribution (0.05)**											
373												
374	**Nonparametric Distribution Free UCLs**											
375				95% CLT UCL		124.8	95% Jackknife UCL					125.2
376				95% Standard Bootstrap UCL		124.7	95% Bootstrap-t UCL					306.2
377				95% Hall's Bootstrap UCL		300.5	95% Percentile Bootstrap UCL					133
378				95% BCA Bootstrap UCL		170.5						

379			90% Chebyshev(Mean, Sd) UCL			164.9			95% Chebyshev(Mean, Sd) UCL			205.2
380			97.5% Chebyshev(Mean, Sd) UCL			261			99% Chebyshev(Mean, Sd) UCL			370.8
381												
382						**Suggested UCL to Use**						
383			95% Chebyshev (Mean, Sd) UCL			205.2						
384												
385						Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.						
386						Recommendations are based upon data size, data distribution, and skewness.						
387						These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).						
388						However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.						
389												
390												
391	**Zinc**											
392												
393						**General Statistics**						
394					Total Number of Observations	126				Number of Distinct Observations		85
395										Number of Missing Observations		0
396					Minimum	11				Mean		229.2
397					Maximum	6200				Median		55
398					SD	646.9				Std. Error of Mean		57.63
399					Coefficient of Variation	2.822				Skewness		7.252
400												
401						**Normal GOF Test**						
402					Shapiro Wilk Test Statistic	0.336				**Shapiro Wilk GOF Test**		
403					5% Shapiro Wilk P Value	0				Data Not Normal at 5% Significance Level		
404					Lilliefors Test Statistic	0.368				**Lilliefors GOF Test**		
405					5% Lilliefors Critical Value	0.0793				Data Not Normal at 5% Significance Level		
406						**Data Not Normal at 5% Significance Level**						
407												
408						**Assuming Normal Distribution**						
409						**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**	
410					95% Student's-t UCL	324.7				95% Adjusted-CLT UCL (Chen-1995)		363.8
411										95% Modified-t UCL (Johnson-1978)		330.9
412												
413						**Gamma GOF Test**						
414					A-D Test Statistic	10.53				**Anderson-Darling Gamma GOF Test**		
415					5% A-D Critical Value	0.808				Data Not Gamma Distributed at 5% Significance Level		
416					K-S Test Statistic	0.232				**Kolmogorov-Smirnov Gamma GOF Test**		
417					5% K-S Critical Value	0.0868				Data Not Gamma Distributed at 5% Significance Level		
418						**Data Not Gamma Distributed at 5% Significance Level**						
419												
420						**Gamma Statistics**						
421					k hat (MLE)	0.613				k star (bias corrected MLE)		0.603
422					Theta hat (MLE)	374.1				Theta star (bias corrected MLE)		379.9
423					nu hat (MLE)	154.4				nu star (bias corrected)		152
424					MLE Mean (bias corrected)	229.2				MLE Sd (bias corrected)		295.1
425										Approximate Chi Square Value (0.05)		124.5
426					Adjusted Level of Significance	0.0481				Adjusted Chi Square Value		124.3
427												
428						**Assuming Gamma Distribution**						
429					95% Approximate Gamma UCL (use when n>=50))	279.8				95% Adjusted Gamma UCL (use when n<50)		280.5
430												
431						**Lognormal GOF Test**						
432					Shapiro Wilk Test Statistic	0.91				**Shapiro Wilk Lognormal GOF Test**		

433	5% Shapiro Wilk P Value					3.175E-10	Data Not Lognormal at 5% Significance Level					
434	Lilliefors Test Statistic					0.154	**Lilliefors Lognormal GOF Test**					
435	5% Lilliefors Critical Value					0.0793	Data Not Lognormal at 5% Significance Level					
436	**Data Not Lognormal at 5% Significance Level**											
437												
438	**Lognormal Statistics**											
439	Minimum of Logged Data					2.398	Mean of logged Data					4.429
440	Maximum of Logged Data					8.732	SD of logged Data					1.185
441												
442	**Assuming Lognormal Distribution**											
443	95% H-UCL					217.3	90% Chebyshev (MVUE) UCL					235.2
444	95% Chebyshev (MVUE) UCL					265.8	97.5% Chebyshev (MVUE) UCL					308.3
445	99% Chebyshev (MVUE) UCL					391.7						
446												
447	**Nonparametric Distribution Free UCL Statistics**											
448	**Data do not follow a Discernible Distribution (0.05)**											
449												
450	**Nonparametric Distribution Free UCLs**											
451	95% CLT UCL					324	95% Jackknife UCL					324.7
452	95% Standard Bootstrap UCL					325.7	95% Bootstrap-t UCL					470.5
453	95% Hall's Bootstrap UCL					726	95% Percentile Bootstrap UCL					335.7
454	95% BCA Bootstrap UCL					373.2						
455	90% Chebyshev(Mean, Sd) UCL					402.1	95% Chebyshev(Mean, Sd) UCL					480.4
456	97.5% Chebyshev(Mean, Sd) UCL					589.1	99% Chebyshev(Mean, Sd) UCL					802.7
457												
458	**Suggested UCL to Use**											
459	95% Chebyshev (Mean, Sd) UCL					480.4						
460												
461	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
462	Recommendations are based upon data size, data distribution, and skewness.											
463	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
464	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
465												

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Table G1a: Summary of Laboratory Results – Metals, TRH, BTEX, PAH

			Metals								TRH						BTEX				PAH			
			Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	TRH C6 - C10	TRH >C10 C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes	[a] Naphthalene	Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ	Total PAHs
		PQL	4	0.4	1	1	1	0.1	1	1	25	50	25	50	100	100	0.2	0.5	1	1	1	0.05	0.5	0.05
Sample ID	Depth	Sampled Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
February 2020																								
TP01	0.1-0.5	04/02/2020	6	<0.4	7	29	16	<0.1	14	55	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP02	0-0.3	04/02/2020	5	<0.4	14	36	26	<0.1	16	130	<25	<50	<25	<50	<100	<100	0.3	2	4	11	<1	<0.05	<0.5	<0.05
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP03	0-0.4	04/02/2020	7	<0.4	14	27	490	<0.1	14	93	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP14/A1	0-0.2	04/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP04	0-0.4	04/02/2020	6	<0.4	15	23	72	<0.1	12	150	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.2	<0.5	0.92
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP04/A1	0-0.4	04/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP05	0-0.3	04/02/2020	5	<0.4	16	22	27	<0.1	11	120	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
BD1/20200204	0-0.3	04/02/2020	10	<1	15	24	36	<0.1	12	77	<10	<50	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP06	0-0.3	03/02/2020	6	<0.4	21	37	25	<0.1	19	200	<25	<50	<25	<50	<100	100	<0.2	<0.5	<1	<1	<1	0.4	0.5	2.8
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP07	0.3-0.8	03/02/2020	7	1	15	69	90	0.2	14	370	<25	<50	<25	<50	120	110	<0.2	<0.5	<1	<1	<1	1.3	1.3	6.6
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP07/A1	0.3-0.8	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP08	0-0.5	03/02/2020	6	<0.4	11	25	26	<0.1	15	78	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP08	2-2.5	03/02/2020	23	<0.4	33	160	220	0.9	10	260	<25	<50	<25	<50	240	110	<0.2	<0.5	<1	<1	<1	0.4	<0.5	2.4
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP08/A1	2-2.5	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP09	1.5-2.0	03/02/2020	11	<0.4	17	35	28	<0.1	11	36	<25	<50	<25	<50	250	100	<0.2	<0.5	<1	<1	<1	2.6	3.5	22
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP09	3.0-3.5	03/02/2020	9	1	26	55	58	<0.1	14	250	<25	420	<25	420	1600	430	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP09/A2	1.5-2.0	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP10	0-0.5	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP10/A1	0-0.5	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP11	1-1.5	03/02/2020	9	0.5	21	18	25	<0.1	5	32	<25	<50	<25	<50	140	100	<0.2	<0.5	<1	<1	<1	0.92	1.2	5.3
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP11	1.8-2.0	03/02/2020	6	<0.4	18	20	24	<0.1	14	44	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP11	1.7-2.1	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP12	0-0.5	03/02/2020	5	<0.4	10	5	13	<0.1	2	22	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
BD2/20200203	0-0.5	03/02/2020	6	<0.4	12	7	12	<0.1	6	24	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP12	2-2.5	03/02/2020	5	<0.4	17	19	28	<0.1	14	44	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP13	0-0.5	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP14	0-0.5	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP14	0.6-1.6	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP14	1.5-1.7	03/02/2020	5	<0.4	10	36	130	0.2	7	260	<25	<50	<25	<50	130	<100	<0.2	<0.5	<1	<1	<1	2.5	3	18
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP14/A2	1.5-1.7	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP15	1.5-1.7	03/02/2020	10	0.4	24	40	47	<0.1	11	160	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP15	1.5-2.0	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP15	3.5-3.7	03/02/2020	6	<0.4	16	22	29	<0.1	15	74	<25	<50	<25	<50	140	120	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP15	2.5-3.0	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
TP14	0-0.2	03/02/2020	6	<0.4	12	31	24	<0.1	16	89	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
November 2019																								
BH201	0 - 0.2m	16/09/2019	7	<0.4	18	18	28	<0.1	13	47	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	0.2
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
BD1/20190916	0 - 0.2m	16/09/2019	6	<0.4	14	22	25	<0.1	12	52	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	0.3
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
BH201	0.8 - 1m	16/09/2019	6	<0.4	15	22	18	<0.1	15	47	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
BH202	0 - 0.2m	16/09/2019	<4	<0.4	25	28	37	<0.1	20	28	<25	<50	<25	<50	820	1300	<0.2	<0.5	<1	<1	<1	0.5	0.8	8.6
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
BH202	0.4 - 0.45m	16/09/2019	5	<0.4	8	18	22	<0.1	5	34	<25	<50	<25	<50	<100	100	<0.2	<0.5	<1	<1	<1	0.1	<0.5	0.83
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
BH203	0.4 - 0.5m	16/09/2019	4	<0.4	9	27	25	<0.1	6	33	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
BH203	0.9 - 1m	16/09/2019	5	<0.4	11	21	10	<0.1	7	29	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
BH204	0 - 0.2m	16/09/2019	5	<0.4	13	21	15	<0.1	10	33	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
BH204	0.4 - 0.5m	16/09/2019	<4	<0.4	8	13	8	<0.1	5	18	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
BH204	0.8 - 1m	16/09/2019	6	<0.4	15	11	19	<0.1	7	13	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC
BH205	0 - 0.2m	16/09/2019	<4	<0.4	11	19	13	<0.1	5	19	<25	<50	<25	<50	260	350	<0.2	<0.5	<1	<1	<1	0.06	<0.5	0.3
			3000	160	900	NC	3600	680	240000	340	1500	1800	730	NC	6000	580	400000	1500	NC	NC	NC	NC	310	215	NL	170	NC	2500	NC	6600	1	95	NL	135	NL	185	NL	95	NL	370	NC	1.4	40	NC	4000	NC

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Table G1b: Summary of Laboratory Results – Phenol, OCP, OPP, PCB and Asbestos

			Phenol	OCP								OPP	PCB	Asbestos		
			Phenol	DDT+DDE+DDD c	Aldrin & Dieldrin	Total Chlordane	Total Endosulfan	Endrin	Heptachlor	HCB	Methoxychlor	Chlorpyriphos	Total PCB	Asbestos ID >0.1g/kg	Asbestos > 7mm	FA and AF Estimation
		PQL	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		-	<0.001
Sample ID	Depth	Sampled Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-	%(w/w)	%(w/w)
February 2020																
TP01	0.1-0.5	04/02/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	<0.001
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP02	0-0.3	04/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<0.001
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP03	0-0.4	04/02/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	DETECTED	0.017	<0.001
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP14/A1	0-0.2	04/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	DETECTED	NT	NT
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP04	0-0.4	04/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	DETECTED	0.005	<0.001
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP04/A1	0-0.4	04/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	DETECTED	NT	NT
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP05	0-0.3	04/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<0.001
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
BD1/20200204	0-0.3	04/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP06	0-0.3	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NT
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP07	0.3-0.8	03/02/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	DETECTED	0.019	<0.001
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP07/A1	0.3-0.8	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	DETECTED	NT	NT
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP08	0-0.5	03/02/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	<0.001
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP08	2-2.5	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	DETECTED	0.035	<0.001
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP08/A1	2-2.5	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	DETECTED	NT	NT
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP09	1.5-2.0	03/02/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	DETECTED	0.011	<0.001
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP09	3.0-3.5	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	DETECTED	0.032	<0.001
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP09/A2	1.5-2.0	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	DETECTED	NT	NT
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP10	0-0.5	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	DETECTED	0.084	<0.001
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP10/A1	0-0.5	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	DETECTED	NT	NT
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP11	1-1.5	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<0.001
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP11	1.8-2.0	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP11	1.7-2.1	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<0.001
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP12	0-0.5	03/02/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	<0.001
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
BD2/20200203	0-0.5	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP12	2-2.5	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<0.001
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP13	0-0.5	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<0.001
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP14	0-0.5	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<0.001
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP14	0.6-1.6	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<0.001
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC
TP14	1.5-1.7	03/02/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NT
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC		0.05 NC	0.001 NC

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			Inorganics		Metals								TPH										BTEX			VOC						Solvent			
			Moisture	pH (aqueous extract)	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Asbestos	C10-C16	C16-C34	C34-C40	F2-NAPHTHALENE	C6 - C9	C10 - C14	C15 - C28	C29-C36	C6-C10 less BTEX (F1)	C6-C10	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Chloroform	Tetrachloroethene	Hexachlorobenzene	Other Vocs	Cyclohexane	Acenaphthene	Acenaphthylene
			%	pH_Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PQL			0.1		4	0.4	1	1	1	0.1	1	1		50	100	100	50	25	50	100	100	25	25	0.2	1	0.5	2	1	1	1	0.1	1	1	0.1	0.1
CRC Care Direct Contact HSL-D														**20,000**	**27,000**	**38,000**							**26,000**	**430**	**27,000**	**99,000**									
NEPC 2013 EILs Comm/Ind Aged					**160**		**680**	**340**	**1800**		**580**	**1500**																							
NEPC 2013 Table 1A(1) HILs Comm/Ind D Soil					**3000**	**900**		**240,000**	**1500**	**730**	**6000**	**400,000**																			**80**				
NEPC 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand																																		
0-1m																	**NL**					**260**		**3**	**NL**	**NL**								
1-2m																	**NL**					**370**		**3**	**NL**	**NL**								
2-4m																	**NL**					**630**		**3**	**NL**	**NL**								
>4m																	**NL**					**NL**		**3**	**NL**	**NL**								
NEPC 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil 0-2m															**1700**	**3300**	**170**					**215**		**75**	**165**	**135**								
NEPC 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil														**1000**	**3500**	**10,000**							**700**											
Field_ID	**LocCode**	**Sample_Depth_Range**																																	
BD1-060515	BH3	0.4-0.5	17	-	10	<1	21	22	46	<0.1	4	37	-	<50	<100	<100	<50	<10	<50	<100	<100	<10	<10	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-
BD2-040515	BH15	0-0.1	12	-	8	<1	17	29	20	<0.1	8	108	-	<10	100	120	<50	<10	<50	<100	<100	<10	<10	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-
BD3-050515	BH10	0-0.1	18	-	10	<0.4	20	19	22	<0.1	10	30	-	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	-	-	-	-	-
BD4-300415	BH19	0.5-0.6	17	-	6	<0.4	19	26	15	<0.1	12	33	-	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	-	-	-	-	-
BH1	BH1	0-0.1	19	-	5	<0.4	16	26	39	<0.1	12	52	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	<0.1	-	-	<0.1	<0.1
BH10	BH10	0-0.1	18	-	10	<0.4	18	16	25	<0.1	9	27	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	<0.1	-	-	<0.1	<0.1
BH11	BH11	0-0.1	7.9	-	4	4	200	330	78	<0.1	150	290	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	<0.1	-	-	<0.1	<0.1
BH12	BH12	0-0.1	10	-	<4	<0.4	85	24	7	<0.1	77	54	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	<0.1	-	-	<0.1	<0.1
		0.4-0.5	11	-	11	<0.4	13	34	19	<0.1	16	82		<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	-	-	-	<0.1	<0.1
BH13	BH13	0-0.1	12	-	5	<0.4	9	16	14	<0.1	7	34	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	<0.1	-	-	<0.1	<0.1
		0.4-0.5	13	-	7	0.4	14	41	140	0.2	8	190	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	<1	<1	-	<PQL	<1	<0.1	<0.1
BH14	BH14	0-0.1	15	-	7	<0.4	11	24	16	<0.1	7	48	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	<0.1	-	-	<0.1	<0.1
		0.7-0.8	13	-	5	<0.4	15	15	43	0.2	4	37	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	-	-	-	<0.1	<0.1
		1.4-1.5	18	-	<4	<0.4	20	9	15	<0.1	2	11	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	-	-	-	<0.1	<0.1
BH15	BH15	0-0.1	12	-	6	<0.4	18	18	19	<0.1	10	81	NAD	<50	<100	120	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	<0.1	-	-	<0.1	<0.1
		0.3-0.4	13	-	5	<0.4	27	22	14	<0.1	27	79	NAD	<50	160	140	<50	<25	<50	<100	160	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	-	-	-	<0.1	0.6
		1.4-1.5	17	-	5	<0.4	15	30	13	<0.1	10	53	-	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	-	-	-	<0.1	<0.1
BH16	BH16	0-0.1	13	-	<4	<0.4	20	20	13	<0.1	15	58	NAD	<50	<100	170	<50	<25	<50	<100	120	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	<0.1	-	-	<0.1	<0.1
BH17	BH17	0-0.1	21	-	7	<0.4	15	15	26	<0.1	11	37	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	<0.1	-	-	<0.1	<0.1
BH18	BH18	0-0.1	4.5	-	<4	<0.4	9	54	6	<0.1	38	92	NAD	<50	120	300	<50	<25	<50	<100	170	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	<0.1	-	-	<0.1	<0.1
BH19	BH19	0-0.1	12	-	<4	<0.4	12	50	18	<0.1	15	65	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	<0.1	-	-	<0.1	<0.1
		0.5-0.6	15	5.7	6	<0.4	18	31	15	<0.1	12	27	-	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	-	-	-	<0.1	<0.1
BH2	BH2	0-0.1	17	-	6	<0.4	14	15	17	<0.1	7	21	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	<0.1	-	-	<0.1	<0.1
		0.4-0.5	20	-	5	<0.4	11	17	15	<0.1	10	28	-	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	<1	<1	-	<PQL	<1	<0.1	<0.1
BH20	BH20	0-0.1	17	-	7	<0.4	18	21	21	<0.1	13	36	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	<0.1	-	-	<0.1	<0.1
BH3	BH3	0-0.1	13	-	7	<0.4	16	15	60	0.1	5	58	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	<0.1	-	-	<0.1	<0.1
		0.4-0.5	15	-	8	<0.4	18	13	42	<0.1	5	42	-	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	<1	<1	-	<PQL	<1	<0.1	<0.1
BH4	BH4	0-0.1	17	-	5	<0.4	10	21	49	0.2	7	45	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	<0.1	-	-	<0.1	<0.1
		0.9-1	24	-	10	<0.4	19	15	26	<0.1	8	25	-	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	<1	<1	-	<PQL	<1	<0.1	<0.1
BH5	BH5	0-0.1	18	-	6	<0.4	19	19	23	<0.1	8	26	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	<0.1	-	-	<0.1	<0.1
BH6	BH6	0-0.1	19	7.5	7	<0.4	20	24	31	<0.1	13	55	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	<0.1	-	-	<0.1	<0.1
BH7	BH7	0-0.1	15	-	6	<0.4	17	43	160	0.4	13	130	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	<1	<1	<0.1	<PQL	<1	<0.1	<0.1
		0.8-1	13	-	6	1	16	25	50	0.1	9	62	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	-	-	-	<0.1	<0.1
		2.4-2.5	21	-	12	0.4	16	23	62	<0.1	7	150	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	-	-	-	<0.1	<0.1
BH8	BH8	0-0.1	19	-	7	<0.4	18	18	24	<0.1	12	33	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	<0.1	-	-	<0.1	<0.1
BH9	BH9	0-0.1	10	-	7	<0.4	8	39	16	<0.1	28	100	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	<0.1	-	-	<0.1	<0.1
		1.5-1.6	18	7.8	9	<0.4	19	21	26	<0.1	13	43	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	-	-	-	<0.1	<0.1
		2.4-2.5	18	-	7	<0.4	18	22	24	<0.1	13	44	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	-	-	-	<0.1	<0.1
		5.4-5.5	18	-	4	<0.4	12	18	10	<0.1	7	22	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	-	-	-	<0.1	<0.1
DS1	DS1		30	-	12	0.4	19	35	27	<0.1	16	71	NAD	<50	<100	<100	<50	<25	<50	<100	<100	<25	<25	<0.2	<1	<0.5	<2	<1	<1	<1	<0.1	<PQL	<1	<0.1	<0.1
TB/040515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.2	<1	<0.5	<2	<1	-	-	-	-	-	-	-
TB/050515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.2	<1	<0.5	<2	<1	-	-	-	-	-	-	-
TB/060515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.2	<1	<0.5	<2	<1	-	-	-	-	-	-	-
TS/040515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.09	1.09	1.08	1.09	1.07	-	-	-	-	-	-	-
TS/050515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.89	0.88	0.89	0.88	0.88	-	-	-	-	-	-	-
TS/060515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.03	1.03	1.03	1.03	1.02	-	-	-	-	-	-	-

Notes

DS1	Dam Sediment Sample
BD1-060515	Inter-laboratory duplicate
BD2-040515	Inter-laboratory duplicate
BD3-050515	Intra-laboratory duplicate
BD4-300415	Intra-laboratory duplicate
NAD	No Asbestos Detected
<PQL	All analyte group results below PQL

PAH/Phenols

Field_ID	LocCode	Sample_Depth_Range	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Phenolics Total	Pyrene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PQL			0.1	0.1	0.05	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1		0.1	5	0.1
CRC Care Direct Contact HSL-D													**11,000**				
NEPC 2013 EILs Comm/Ind Aged													**370**				
NEPC 2013 Table 1A(1) HILs Comm/Ind D Soil					**40**									**4000**			
NEPC 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, San																	
0-1m													**NL**				
1-2m													**NL**				
2-4m													**NL**				
>4m													**NL**				
NEPC 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil 0-2m					**1.4**												
NEPC 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																	
BD1-060515	BH3	0.4-0.5	-	-	-	-	-	-	-	-	-	-	<1	-	-	-	-
BD2-040515	BH15	0-0.1	-	-	-	-	-	-	-	-	-	-	<1	-	-	-	-
BD3-050515	BH10	0-0.1	-	-	-	-	-	-	-	-	-	-	<1	-	-	-	-
BD4-300415	BH19	0.5-0.6	-	-	-	-	-	-	-	-	-	-	<1	-	-	-	-
BH1	BH1	0-0.1	<0.1	0.2	0.3	0.4	0.2	0.2	<0.1	0.6	<0.1	0.2	<0.1	3.1	0.3	<5	0.6
BH10	BH10	0-0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0	<0.1	<5	<0.1
BH11	BH11	0-0.1	0.1	0.4	0.4	0.7	0.2	0.3	<0.1	0.7	<0.1	0.2	<0.1	4.2	0.4	<5	0.7
BH12	BH12	0-0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0	<0.1	<5	<0.1
		0.4-0.5	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0	<0.1	-	<0.1
BH13	BH13	0-0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0	<0.1	<5	<0.1
		0.4-0.5	0.2	0.4	0.5	0.7	0.2	0.4	<0.1	0.9	<0.1	0.2	<0.1	5.2	0.7	-	1
BH14	BH14	0-0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0	<0.1	<5	<0.1
		0.7-0.8	<0.1	0.3	0.3	0.6	0.2	0.3	<0.1	0.5	<0.1	0.2	<0.1	3.2	0.2	-	0.6
		1.4-1.5	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0	<0.1	-	<0.1
BH15	BH15	0-0.1	<0.1	0.2	0.3	0.5	0.3	0.2	<0.1	0.4	<0.1	0.2	<0.1	2.7	0.1	<5	0.4
		0.3-0.4	0.2	0.5	**3.4**	3	3.6	0.4	0.6	0.2	<0.1	2.6	<1 - 0.2	17	0.2	-	0.9
		1.4-1.5	<0.1	<0.1	0.3	0.3	0.3	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	1.2	<0.1	-	0.1
BH16	BH16	0-0.1	<0.1	0.2	0.2	0.4	0.2	0.2	<0.1	0.3	<0.1	0.1	<0.1	2	0.1	<5	0.3
BH17	BH17	0-0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0	<0.1	<5	<0.1
BH18	BH18	0-0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0	<0.1	<5	<0.1
BH19	BH19	0-0.1	<0.1	0.1	0.1	<0.2	<0.1	0.1	<0.1	0.3	<0.1	<0.1	<0.1	1.3	0.3	<5	0.3
		0.5-0.6	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0	<0.1	-	<0.1
BH2	BH2	0-0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0	<0.1	<5	<0.1
		0.4-0.5	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0	<0.1	-	<0.1
BH20	BH20	0-0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0	<0.1	<5	<0.1
BH3	BH3	0-0.1	<0.1	0.1	0.1	0.3	0.1	0.1	<0.1	0.3	<0.1	<0.1	<0.1	1.4	0.1	<5	0.3
		0.4-0.5	<0.1	0.2	0.2	0.3	0.1	0.2	<0.1	0.5	<0.1	0.1	<0.1	2.5	0.3	-	0.5
BH4	BH4	0-0.1	0.1	0.7	1	2	0.7	0.7	0.1	1	<0.1	0.7	<0.1	7.9	0.2	<5	1.2
		0.9-1	<0.1	<0.1	0.07	<0.2	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.3	<0.1	-	0.1
BH5	BH5	0-0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0	<0.1	<5	<0.1
BH6	BH6	0-0.1	<0.1	0.2	0.3	0.5	0.3	0.3	<0.1	0.8	<0.1	0.2	<0.1	3.9	0.4	<5	0.8
BH7	BH7	0-0.1	0.1	0.7	0.74	1	0.4	0.6	<0.1	1.1	<0.1	0.4	<0.1	6.9	0.5	<5	1.1
		0.8-1	0.3	0.7	0.76	1	0.5	0.7	<0.1	1.4	<0.1	0.4	<0.1	8.1	0.8	-	1.4
		2.4-2.5	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0	<0.1	-	<0.1
BH8	BH8	0-0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0	<0.1	<5	<0.1
BH9	BH9	0-0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0	<0.1	<5	<0.1
		1.5-1.6	<0.1	<0.1	0.08	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.08	<0.1	-	<0.1
		2.4-2.5	<0.1	0.1	0.2	0.3	0.1	0.1	<0.1	0.2	<0.1	0.1	<0.1	1.5	<0.1	-	0.3
		5.4-5.5	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0	<0.1	-	<0.1
DS1	DS1		<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0	<0.1	<5	<0.1
TB/040515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TB/050515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TB/060515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TS/040515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TS/050515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TS/060515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Polychlorinated Biphenyls / Organochlorine Pesticides

Field_ID	LocCode	Sample_Depth_Range	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PQL			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
CRC Care Direct Contact HSL-D																												
NEPC 2013 EILs Comm/Ind Aged																		**640**										
NEPC 2013 Table 1A(1) HILs Comm/Ind D Soil																							**100**			**50**		**2500**
NEPC 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, San																												
0-1m																												
1-2m																												
2-4m																												
>4m																												
NEPC 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil 0-2m																												
NEPC 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																												
BD1-060515	BH3	0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD2-040515	BH15	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD3-050515	BH10	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD4-300415	BH19	0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH1	BH1	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH10	BH10	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH11	BH11	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH12	BH12	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	BH13	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14	BH14	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		0.7-0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		1.4-1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15	BH15	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		1.4-1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16	BH16	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH17	BH17	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH18	BH18	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH19	BH19	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH2	BH2	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20	BH20	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH3	BH3	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH4	BH4	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		0.9-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH5	BH5	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH6	BH6	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH7	BH7	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		0.8-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		2.4-2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH8	BH8	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH9	BH9	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		1.5-1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		2.4-2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		5.4-5.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DS1	DS1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TB/040515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TB/050515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TB/060515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TS/040515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TS/050515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TS/060515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Organophosphorous Pesticides / Pesticides

Field_ID	LocCode	Sample_Depth_Range	Azinophos methyl	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenitrothion	Malathion	Ronnel	Parathion
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PQL			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
CRC Care Direct Contact HSL-D														
NEPC 2013 EILs Comm/Ind Aged														
NEPC 2013 Table 1A(1) HILs Comm/Ind D Soil					**2000**									
NEPC 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, San														
0-1m														
1-2m														
2-4m														
>4m														
NEPC 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil 0-2m														
NEPC 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil														
BD1-060515	BH3	0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-
BD2-040515	BH15	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-
BD3-050515	BH10	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-
BD4-300415	BH19	0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-
BH1	BH1	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH10	BH10	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH11	BH11	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH12	BH12	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-
BH13	BH13	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-
BH14	BH14	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		0.7-0.8	-	-	-	-	-	-	-	-	-	-	-	-
		1.4-1.5	-	-	-	-	-	-	-	-	-	-	-	-
BH15	BH15	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-
		1.4-1.5	-	-	-	-	-	-	-	-	-	-	-	-
BH16	BH16	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH17	BH17	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH18	BH18	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH19	BH19	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-
BH2	BH2	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-
BH20	BH20	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH3	BH3	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-
BH4	BH4	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		0.9-1	-	-	-	-	-	-	-	-	-	-	-	-
BH5	BH5	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH6	BH6	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH7	BH7	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		0.8-1	-	-	-	-	-	-	-	-	-	-	-	-
		2.4-2.5	-	-	-	-	-	-	-	-	-	-	-	-
BH8	BH8	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH9	BH9	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		1.5-1.6	-	-	-	-	-	-	-	-	-	-	-	-
		2.4-2.5	-	-	-	-	-	-	-	-	-	-	-	-
		5.4-5.5	-	-	-	-	-	-	-	-	-	-	-	-
DS1	DS1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TB/040515			-	-	-	-	-	-	-	-	-	-	-	-
TB/050515			-	-	-	-	-	-	-	-	-	-	-	-
TB/060515			-	-	-	-	-	-	-	-	-	-	-	-
TS/040515			-	-	-	-	-	-	-	-	-	-	-	-
TS/050515			-	-	-	-	-	-	-	-	-	-	-	-
TS/060515			-	-	-	-	-	-	-	-	-	-	-	-

Notes

DS1	Dam Sediment Sample
BD1-060515	Inter-laboratory duplicate
BD2-040515	Inter-laboratory duplicate
BD3-050515	Intra-laboratory duplicate
BD4-300415	Intra-laboratory duplicate
NAD	No Asbestos Detected
<PQL	All analyte group results below PQL

Douglas Partners
Geotechnics | Environment | Groundwater

Table F1d: Surface Soil Results 2015

			Inorganics		Metals								TPH										BTEX					Halogenated Benzenes							
			Moisture	pH (aqueous extract)	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	C10-C16	C16-C34	C34-C40	F2-NAPHTHALENE	C6 - C9	C10 - C14	C15 - C28	C29-C36	C6-C10 less BTEX (F1)	C6-C10	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Hexachlorobenzene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ
			%	pH_Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.1		4	0.4	1	1	1	0.1	1	1	50	100	100	50	25	50	100	100	25	25	0.2	1	0.5	2	1	0.1	0.1	0.1	0.1	0.1	0.05	0.05
CRC Care Direct Contact HSL-D													**20,000**	**27,000**	**38,000**							**26,000**	**430**	**27,000**	**99,000**									
NEPC 2013 EILs Comm/Ind Aged					**160**		**680**	**340**	**1800**		**580**	**1500**																						
NEPC 2013 Table 1A(1) HILs Comm/Ind D Soil					**3000**	**900**		**240,000**	**1500**	**730**	**6000**	**400,000**																**80**							
NEPC 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand																																		
0-1m																**NL**					**260**		**3**	**NL**	**NL**									
1-2m																**NL**					**370**		**3**	**NL**	**NL**									
2-4m																**NL**					**630**		**3**	**NL**	**NL**									
>4m																**NL**					**NL**		**3**	**NL**	**NL**									
NEPC 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil 0-2m														**1700**	**3300**	**170**					**215**		**75**	**165**	**135**								**1.4**	
NEPC 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil													**1000**	**3500**	**10,000**							**700**												
Field_ID	**LocCode**	**Sample_Depth_Range**	**Sampled_Date-Time**	**Matrix_Description**																															
BD1/300415	S3	0-0.15			29	-	<4	<0.4	6	49	9	<0.1	18	460	<50	210	<100	<50	<25	<50	<100	220	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	-	-	-	-	-
BD2/300415	S6	0-0.15			7.9	-	<4	0.4	27	89	51	<0.1	31	430	<50	1200	830	<50	<25	<50	580	890	<25	<25	<0.2	<1	<0.5	<2	<1	-	-	-	-	-	-	-
S1	S1	0-0.15			28	6.1	6	<0.4	16	16	56	<0.1	7	320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
S2	S2	0-0.15			22	-	12	<0.4	15	27	13	<0.1	7	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
S3	S3	0-0.15			22	-	4	<0.4	7	61	12	<0.1	19	360	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
S4	S4	0-0.15			20	-	<4	<0.4	7	44	13	<0.1	16	140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
S5	S5	0-0.15			46	-	<4	3	38	120	200	0.2	24	**6200**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
S6	S6	0-0.15			7.1	-	<4	0.5	27	110	62	<0.1	35	520	<50	1300	760	<50	<25	<50	660	890	<25	<25	<0.2	<1	<0.5	<2	<1	<0.1	<0.1	0.1	<0.1	0.2	0.2	<0.5
S7	S7	0-0.15			8.3	-	<4	0.5	32	60	69	<0.1	57	400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
S8	S8	0-0.15			37	-	<4	<0.4	12	34	15	<0.1	15	170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
S9	S9	0-0.15			24	-	<4	<0.4	16	61	25	<0.1	52	230	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
S10	S10	0-0.15			18	-	<4	0.7	31	89	42	<0.1	49	480	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
S11	S11	0-0.15			19	8	<4	0.5	26	74	200	<0.1	65	750	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
S12	S12	0-0.15			6.2	-	<4	<0.4	7	71	**3700**	<0.1	11	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
S13	S13	0-0.15			14	-	7	0.5	20	12	95	<0.1	6	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
S14	S14	0-0.15			7.9	-	<4	<0.4	21	58	14	<0.1	27	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
S15	S15	0-0.15			40	-	7	0.6	23	57	110	<0.1	17	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
S16	S16	0-0.15			35	-	<4	<0.4	<1	41	<1	<0.1	4	260	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
S17	S17	0-0.15			41	7.1	6	<0.4	23	65	34	<0.1	23	240	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
TB/300415					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.2	<1	<0.5	<2	<1	-	-	-	-	-	-	-
TS/300415					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.95	0.95	0.95	0.96	0.95	-	-	-	-	-	-	-

Note
Loose fibre bundles of Chrysotile asbestos identified within sample S5 (total weight 0.0005g). Which in 25.86g of soil is 0.02g/kg (i.e. < reporting limit for the method of 0.1g/kg).

Table F1d: Surface Soil Results 2015

| | | | | | PAH/Phenols | | | | | | | | | | | Polychlorinated Biphenyls | | | | | | | Organochlorine Pesticides | | | | | | | | | | |

Table 19: Material Sample Results

					Metals																VOC
					Arsenic	Antimony	Beryllium	Barium	Boron	Cadmium	Chromium	Copper	Cobalt	Lead	Manganese	Mercury	Molybdenum	Nickel	Tin	Selenium	Zinc	VOC ^
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					4					0.4	1	1				0.1		1			1	0.2-1
NEPC 2013 Table 1A(1) HILs Comm/Ind D Soil					3000		500		300,000	900	3600	240000	4000	1500	60,000	730		6000		10,000	400000	
NEPC 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand 0-1m																						
NEPC 2013 Site Specific EILs for Comm/Ind and 'aged' soils					160					-	670	320				-		420			1000	
NEPC 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil 0-2m																						
NEPC 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																						
Field_ID	**LocCode**	**Sample_Depth**	**Sampled_Date-Time**	**Matrix_Description**																		
B1	B1	-	4/30/2015	Material	28	1000	<1	62	220	1	2	8	2	51,000	1	0.3	<1	2	93	10	890	<PQL

Notes:

^ All VOC contaminants detected below the laboratory reporting limit

Soil Investigation levels provided for reference only

Elevated concentrations

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Table G2: Groundwater and Surface Water Results

			PAHs in Water - Low Level			Inorganics								Physical properties					Cyanides	Metals																			
			Benzo(a)pyrene TEQ	Benzo(b+j)fluoranthene	Total +ve PAHs	Ammonia	Chloride	Nitrate (as N)	Nitrite (as N)	Total Nitrogen	Phosphate (as P)	Phosphorous Total	Sulphate	Total Alkalinity as CaCO3	pH	EC	DO	Turbidity	Cyanide Total	Arsenic	Arsenic (Filtered)	Cadmium	Cadmium (Filtered)	Calcium (Filtered)	Chromium (III+VI)	Chromium (III+VI) (Filtered)	Copper	Copper (Filtered)	Lead	Lead (Filtered)	Manganese (Filtered)	Magnesium (Filtered)	Mercury	Mercury (Filtered)	Nickel	Nickel (Filtered)	Zinc	Zinc (Filtered)
			µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L		mg/L		mg/L	mg/L	pH units	µS/cm	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PQL			**0.5**	**0.2**		**0.005**	**1**	**0.005**	**0.005**		**0.005**		**1**	**5**		**1**	**0.1**	**0.1**	**0.004**	**0.001**	**0.001**	**0.0001**	**0.0001**	**0.5**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.005**	**0.5**	**0.00005**	**0.00005**	**0.001**	**0.001**	**0.001**	**0.001**
ANZECC 2000 LOW RELIABILITY FW																														1.9								
ANZECC 2000 Fresh Water						0.9													0.007			0.0002	0.0002					0.0014	0.0014	0.0034	0.0034			0.00006	0.00006	0.011	0.013	0.008	0.008
ANZG (2018) Freshwater (unknown reliability) toxicant DGVs																									0.0048	0.0048													
ANZG (2018) Freshwater 95% toxicant DGVs						0.9													0.007	0.024 / 0.013	0.024 / 0.013	0.00037 [c]	0.00037 [c]					0.0014	0.0014	0.22 [c]	0.22 [c]	1.9		0.0006 [a]	0.0006 [a]	0.18 [c]	0.18 [c]	0.13 [c]	0.13 [c]
NEPM 2013 Table 1A(4) HSL D GW Vapour Intrusion, Clay																																						
2-4m																																						
4-8m																																						
>8m																																						
Field_ID	**LocCode**	**Sampled_Date-Time**																																				
Groundwater and Surface Water Samples (April 2020)																																						
ABH01	ABH01	07/04/2020	<0.5	<0.2	<0.1	0.18	1500	-	-	-	-	-	380	410	7.7	-	-	-	<0.004	-	<0.001	-	<0.0001	-	-	<0.001	-	0.005	-	<0.001	0.11	-	-	<0.00005	-	0.002	-	0.031
ABH02	ABH02	07/04/2020	<0.5	<0.2	<0.1	0.67	2200	-	-	-	-	-	370	600	8.9	-	-	-	<0.004	-	<0.001	-	<0.0001	-	-	0.005	-	0.003	-	<0.001	0.1	-	-	<0.00005	-	0.001	-	<0.001
ABH03	ABH03	07/04/2020	<0.5	<0.2	<0.1	0.21	4800	-	-	-	-	-	430	190	6.6	-	-	-	<0.004	-	<0.001	-	<0.0001	-	-	<0.001	-	<0.001	-	<0.001	9.2	-	-	<0.00005	-	0.032	-	0.052
ABH08	ABH08	07/04/2020	<0.5	<0.2	<0.1	<0.005	5700	-	-	-	-	-	1100	490	7.6	-	-	-	<0.004	-	<0.001	-	<0.0001	-	-	0.001	-	<0.001	-	<0.001	0.44	-	-	<0.00005	-	<0.001	-	0.001
BH2	BH2	07/04/2020	<0.5	<0.2	<0.1	0.45	6400	-	-	-	-	-	540	1100	7.3	-	-	-	<0.004	-	<0.001	-	0.0003	-	-	<0.001	-	0.002	-	<0.001	0.25	-	-	<0.00005	-	0.007	-	0.006
BH4	BH4	07/04/2020	<0.5	<0.2	<0.1	0.045	2500	-	-	-	-	-	710	720	7.2	-	-	-	<0.004	-	0.001	-	<0.0001	-	-	<0.001	-	<0.001	-	<0.001	2.7	-	-	<0.00005	-	0.003	-	0.003
BH201	BH201	07/04/2020	<0.5	<0.2	<0.1	0.065	540	-	-	-	-	-	140	420	7.4	-	-	-	<0.004	-	<0.001	-	<0.0001	-	-	<0.001	-	0.003	-	<0.001	0.17	-	-	<0.00005	-	0.003	-	0.023
BH204	BH204	07/04/2020	<0.5	<0.2	<0.1	4.1	8000	-	-	-	-	-	370	2000	7.3	-	-	-	<0.004	-	0.001	-	<0.0001	-	-	0.003	-	0.002	-	<0.001	0.1	-	-	<0.00005	-	0.038	-	0.002
BH208	BH208	07/04/2020	<0.5	<0.2	<0.1	0.054	4500	-	-	-	-	-	540	640	7.2	-	-	-	<0.004	-	<0.001	-	<0.0001	-	-	<0.001	-	0.006	-	<0.001	0.02	-	-	<0.00005	-	0.001	-	0.007
BH213	BH213	07/04/2020	<0.5	<0.2	<0.1	0.12	2900	-	-	-	-	-	690	410	7.1	-	-	-	<0.004	-	0.001	-	<0.0001	-	-	<0.001	-	0.001	-	<0.001	17	-	-	<0.00005	-	0.024	-	0.007
SW01	SW01	07/04/2020	<0.5	<0.2	<0.1	0.073	180	-	-	1.2	-	0.2	26	200	7.9	920	8.8	18	-	-	0.001	-	<0.0001	-	-	<0.001	-	0.002	-	<0.001	0.18	-	-	<0.00005	-	0.002	-	0.003
SW02	SW02	07/04/2020	<0.5	<0.2	<0.1	0.68	76	-	-	2.2	-	0.3	14	150	7.5	520	8.5	12	-	-	0.001	-	<0.0001	-	-	<0.001	-	<0.001	-	<0.001	0.35	-	-	<0.00005	-	0.001	-	0.012
SW03	SW03	07/04/2020	<0.5	<0.2	<0.1	0.060	180	-	-	1.3	-	0.2	28	190	7.8	940	8.9	14	-	-	0.001	-	<0.0001	-	-	<0.001	-	0.002	-	<0.001	0.28	-	-	<0.00005	-	0.002	-	0.004
SW04	SW04	07/04/2020	<0.5	<0.2	<0.1	0.71	75	-	-	2.1	-	0.4	15	140	7.5	530	8.6	11	-	-	0.001	-	<0.0001	-	-	<0.001	-	<0.001	-	<0.001	<0.005	-	-	<0.00005	-	0.001	-	0.003
SW05	SW05	07/04/2020	<0.5	<0.2	<0.1	0.22	77	-	-	1.6	-	0.6	13	160	7.6	550	8.5	62	-	-	0.001	-	<0.0001	-	-	<0.001	-	<0.001	-	<0.001	0.046	-	-	<0.00005	-	0.001	-	0.007
SW06	SW06	07/04/2020	<0.5	<0.2	<0.1	0.031	35	-	-	45	-	0.3	17	44	7.3	590	9.3	2.9	-	-	<0.001	-	<0.0001	-	-	<0.001	-	0.055	-	<0.001	0.087	-	-	<0.00005	-	0.002	-	1.4
BD1/20200307	BH4	07/04/2020	<0.5	<0.2	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	<0.0001	-	-	<0.001	-	0.001	-	<0.001	3	-	-	<0.00005	-	0.004	-	0.004
TRIP BLANK	-	07/04/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP SPIKE	-	07/04/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD2/20200307		07/04/2020	<0.5	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	<0.0001	-	-	<0.001	-	0.061	-	<0.001	0.098	-	-	<0.0001	-	0.002	-	1.53
Groundwater and Surface Water Samples (February 2020)																																						
ABH01	ABH01	28/02/2020	<0.5	<0.2	<0.1	0.75	4200	-	-	-	-	-	570	660	-	-	-	-	<0.004	-	0.001	-	0.0002	-	-	<0.001	-	0.003	-	<0.001	0.16	-	-	<0.00005	-	0.006	-	0.044
ABH02	ABH02	28/02/2020	<0.5	<0.2	<0.1	1.4	5800	-	-	-	-	-	650	820	-	-	-	-	<0.004	-	0.002	-	0.0001	-	-	0.005	-	0.012	-	<0.001	0.39	-	-	<0.00005	-	0.005	-	0.02
ABH03	ABH03	28/02/2020	<0.5	<0.2	<0.1	0.11	8500	-	-	-	-	-	810	440	-	-	-	-	<0.004	-	<0.001	-	0.0001	-	-	<0.001	-	<0.001	-	<0.001	17	-	-	<0.00005	-	0.029	-	0.035
BH2	BH2	28/02/2020	<0.5	<0.2	<0.1	0.11	4000	-	-	-	-	-	440	890	-	-	-	-	<0.004	-	<0.001	-	<0.0001	-	-	<0.001	-	0.016	-	<0.001	0.36	-	-	<0.00005	-	0.004	-	0.004
BH4	BH4	28/02/2020	<0.5	<0.2	<0.1	0.054	2600	-	-	-	-	-	820	620	-	-	-	-	<0.004	-	0.001	-	<0.0001	-	-	<0.001	-	<0.001	-	<0.001	2.1	-	-	<0.00005	-	0.004	-	0.006
BH201	BH201	28/02/2020	<0.5	<0.2	<0.1	0.29	4300	-	-	-	-	-	460	770	-	-	-	-	<0.004	-	0.002	-	<0.0001	-	-	<0.001	-	0.002	-	<0.001	1.7	-	-	<0.00005	-	0.012	-	0.012
BH204	BH204	28/02/2020	<0.5	<0.2	<0.1	3.9	8100	-	-	-	-	-	370	2300	-	-	-	-	<0.004	-	0.001	-	<0.0001	-	-	0.004	-	<0.001	-	<0.001	0.47	-	-	<0.00005	-	0.052	-	0.002
BH208	BH208	28/02/2020	<0.5	<0.2	<0.1	0.13	6200	-	-	-	-	-	530	850	-	-	-	-	<0.004	-	<0.001	-	<0.0001	-	-	<0.001	-	0.003	-	<0.001	0.038	-	-	<0.00005	-	0.001	-	0.013
BH213	BH213	28/02/2020	<0.5	<0.2	<0.1	0.12	2300	-	-	-	-	-	670	350	-	-	-	-	<0.004	-	0.002	-	<0.0001	-	-	<0.001	-	0.002	-	<0.001	14	-	-	<0.00005	-	0.03	-	0.012
SW01	SW01	28/02/2020	<0.5	<0.2	<0.1	0.46	150	-	-	1.8	-	0.2	22	270	7.9	980	7.1		-	-	0.002	-	<0.0001	-	-	<0.001	-	0.002	-	<0.001	2	-	-	<0.00005	-	0.004	-	0.009
SW02	SW02	28/02/2020	<0.5	<0.2	<0.1	0.30	48	-	-	2.5	-	0.4	24	110	7.5	420	7.0		-	-	0.002	-	<0.0001	-	-	<0.001	-	0.005	-	<0.001	0.45	-	-	<0.00005	-	0.002	-	0.015
SW03	SW03	28/02/2020	<0.5	<0.2	<0.1	0.20	190	-	-	10	-	0.2	49	260	7.8	1200	7.0		-	-	0.002	-	<0.0001	-	-	<0.001	-	0.004	-	<0.001	1.9	-	-	<0.00005	-	0.005	-	0.006
SW04	SW04	28/02/2020	<0.5	<0.2	<0.1	0.21	44	-	-	2.4	-	0.3	23	110	7.6	420	6.6		-	-	0.002	-	<0.0001	-	-	<0.001	-	0.005	-	<0.001	3.6	-	-	<0.00005	-	0.002	-	0.01
SW05	SW05	28/02/2020	<0.5	<0.2	<0.1	0.091	51	-	-	1.4	-	0.4	22	130	7.4	460	7.2		-	-	0.002	-	<0.0001	-	-	<0.001	-	0.003	-	<0.001	0.65	-	-	<0.00005	-	0.002	-	0.007
SW06	SW06	28/02/2020	<0.5	<0.2	<0.1	0.40	88	-	-	170	-	0.4	42	61	7.3	1600	7.2		-	-	<0.001	-	0.0001	-	-	<0.001	-	0.056	-	<0.001	0.31	-	-	<0.00005	-	0.004	-	1.5
BD1/20200228	BH4	28/02/2020	<0.5	<0.2	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.002	-	<0.0001	-	-	<0.001	-	0.001	-	<0.001	1.9	-	-	<0.00005	-	0.004	-	0.005
TRIP BLANK	-	28/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP SPIKE	-	28/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater and Surfacewater Samples (2019)																																						
BD1/20190917	SW01	17/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		0.001	-	0.0002	-	-	<0.001	-	0.009	-	0.001	-	-	<0.00005	-	0.002	-	0.23	-
BD1/20190924	BH208	24/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	0.002	-	0.0002	-	-	<0.001	-	0.009	-	<0.001	-	-	-	<0.00005	-	0.005	-	0.021
BH2	BH2	20/09/2019	<0.5	<0.2	0	0.25	4700	0.19	0.008	-	0.082	-	510	-	-	-	-	-	<0.004	-	<0.001	-	0.0001	61	-	<0.001	-	0.002	-	<0.001	-	290	-	<0.00005	-	0.006	-	0.006
BH201	BH201	24/09/2019	<0.5	<0.2	0	1.7	25,000	0.4	0.051	-	<0.005	-	11,000	-	-	-	-	-	<0.004	-	0.003	-	0.0004	320	-	0.001	-	0.007	-	<0.001	-	290	-	<0.00005	-	0.011	-	0.059
BH204	BH204	20/09/2019	<0.5	<0.2	0	1.3	5200	<0.005	<0.005	-	<0.005	-	2400	-	-	-	-	-	<0.004	-	<0.001	-	<0.0001	150	-	0.002	-	<0.001	-	<0.001	-	650	-	<0.00005	-	0.027	-	0.003
BH208	BH208	24/09/2019	<0.5	<0.2	0	0.47	7200	370	0.097	-	<0.005	-	530	-	-	-	-	-	<0.004	-	0.003	-	0.0002	190	-	<0.001	-	0.009	-	<0.001	-	690	-	<0.00005	-	0.006	-	0.023
BH213	BH213	20/09/2019	<0.5	<0.2	0	0.75	4600	1.2	0.038	-	0.016	-	660	-	-	-	-	-	<0.004	-	<0.001	-	0.0002	51	-	<0.001	-	0.003	-	<0.001	-	490	-	<0.00005	-	0.01	-	0.022
BH4	BH4	20/09/2019	<0.5	<0.2	0	0.033	2000	0.02	<0.005	-	0.007	-	780	-	-	-	-	-	<0.004	-	0.001	-	0.0002	200	-	<0.001	-	0.007	-	<0.001	-	200	-	<0.00005	-	0.002	-	0.012
Rinsate	Rinsate	17/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SW01	SW01	17/09/2019	<0.5	<0.2	0	1.1	23	6.4	0.054	-	0.17	-	9	-	-	-	-	-	<0.004	0.001	-	0.0002	-	12	<0.001	-	0.011	-	0.002	-	3.5	<0.00005	-	0.002	-	0.24	-
SW02	SW02	17/09/2019	<0.5	<0.2	0	0.12	69	4.7	0.042	-	0.41	-	38	-	-	-	-	-	<0.004	0.001	-	<0.0001	-	19	0.003	-	0.008	-	0.004	-	13	<0.00005	-	0.003	-	0.45	-
SW03	SW03	17/09/2019	<0.5	<0.2	0	0.6	230	0.11	0.029	-	0.087	-	44	-	-	-	-	-	<0.004	0.001	-	<0.0001	-	57	0.002	-	0.007	-	0.004	-	34	<0.00005	-	0.002	-	0.035	-
SW04	SW04	17/09/2019	<0.5	<0.2	0	0.05	110	0.09	<0.005	-	0.019	-	55	-	-	-	-	-	<0.004	<0.001	-	<0.0001	-	26	<0.001	-	0.002	-	<0.001	-	17	<0.00005	-	0.001	-	0.012	-
SW05	SW05	17/09/2019	<0.5	<0.2	0	0.39	230	0.93	0.052	-	0.035	-	41	-	-	-	-	-	<0.004	0.002	-	<0.0001	-	38	0.003	-	0.008	-	0.006	-	26	<0.00005	-	0.004	-	0.034	-
SW06	SW06	17/09/2019	<0.5	<0.2	0	0.17	15	10	0.049	-	0.33	-	11	-	-	-	-	-	<0.004	<0.001	-	<0.0001	-	12	<0.001	-	0.008	-	0.001	-	3.8	<0.00005	-	0.001	-	1.5	-
TB		17/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trip Blank		24/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater and Surface Water Samples (2015)																																						
BD1/150515		15/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.004	-	0.0003	-	<0.001	-	<0.001	-	<0.001	-	-	<0.00005	-	-	0.002	-	0.007
BH20	BH20	15/05/2015	<0.5	<0.2	0	-	-	-	-	-	-	-	-	770	-	-	-	-	-	-	0.004	-	0.0003	76	<0.001	-	-	-	0.001	-	<0.001	-	140	<0.00005	-	-	0.002	-	0.011
BH2	BH2	15/05/2015	<0.5	<0.2	0	-	-	-	-	-	-	-	-	1100	-	-	-	-	-	-	<0.001	-	<0.0001	47	<0.001	-	-	-	0.002	-	<0.001	-	240	<0.00005	-	-	0.006	-	0.009
BH4	BH4	15/05/2015	<0.5	<0.2	0	-	-	-	-	-	-	-	-	1200	-	-	-	-	-	-	<0.001	-	<0.0001	110	<0.001	-	-	-	0.001	-	<0.001	-	210	<0.00005	-	-	0.003	-	0.014
DW1	DW1	15/05/2015	<0.5	<0.2	0	-	-	-	-	-	-	-	-	93	-	-	-	-	-	-	0.001	-	<0.0001	19	<0.001	-	-	-	0.004	-	<0.001	-	11	<0.00005	-	-	0.001	-	0.014

a - 99% LOP adopted due to potential to bioaccumulate or as recommended per ANZG (2018)
b - corresponding to an unknown level of protection
c- adjusted for site averaged hardness values of 790 mg/L (mg/kg $CaCO_3$)
Where the PQL exceeds the guideline values and all results are less than PQL results have not been highlighted.
Highlighted exceedances only shown for current ANZG (2018) guidelines

Table G2: Groundwater and Surface Water Results

| | | | TPH | | | | | | | | | | BTEX | | | | | MAH | | | | | | | | | |

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Table G2: Groundwater and Surface Water Results

			Chlorinated Hydrocarbons													Halogenated Hydrocarbons				Halogenated Benzenes											Solvents	PAH/Phenols																
			Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride	1,1-dichloromethane	Bromomethane	Dichlorodifluoromethane	Trichlorofluoromethane	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Hexachlorobenzene	Cyclohexane	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b,j)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Phenolics Total	Pyrene
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PQL			**0.001**	**0.01**	**0.001**	**0.01**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.01**	**0.001**	**0.01**	**0.01**	**0.01**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.00001**	**0.001**	**0.0001**	**0.0001**	**0.0001**	**0.0001**	**0.0001**	**0.0001**	**0.0001**	**0.0001**	**0.0001**	**0.0001**	**0.0001**	**0.0002**	**0.0002**	**0.05**	**0.0001**
ANZECC 2000 LOW RELIABILITY FW					0.37			0.0008			0.33	0.07			0.0008					0.003		0.16	0.26	0.06																						
ANZECC 2000 Fresh Water																				0.003	0.085	0.16	0.26	0.06																			0.016			
ANZG (2018) Freshwater (unknown reliability) toxicant DGVs					0.37 [a]							0.07			0.1														0.00005 [a]				0.0001 [c]		0.0001 [c]				0.001 [c]				0.0006 [c]		
ANZG (2018) Freshwater 95% toxicant DGVs																				0.003 [a]	0.085 [a]	0.16	0.26	0.06																			0.016			
NEPM 2013 Table 1A(4) HSL D GW Vapour Intrusion, Clay																																													
2-4m																																										NL			
4-8m																																										NL			
>8m																																										NL			
Field_ID	**LocCode**	**Sampled_Date-Time**																																											
Groundwater and Surface Water Samples (April 2020)																																													
ABH01	ABH01	07/04/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
ABH02	ABH02	07/04/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
ABH03	ABH03	07/04/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
ABH08	ABH08	07/04/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
BH2	BH2	07/04/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
BH4	BH4	07/04/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
BH201	BH201	07/04/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
BH204	BH204	07/04/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
BH208	BH208	07/04/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
BH213	BH213	07/04/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
SW01	SW01	07/04/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
SW02	SW02	07/04/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
SW03	SW03	07/04/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
SW04	SW04	07/04/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
SW05	SW05	07/04/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
SW06	SW06	07/04/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
BD1/20200307	BH4	07/04/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
TRIP BLANK	-	07/04/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP SPIKE	-	07/04/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD2/20200307	-	07/04/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater and Surface Water Samples (February 2020)																																													
ABH01	ABH01	28/02/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
ABH02	ABH02	28/02/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
ABH03	ABH03	28/02/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
BH2	BH2	28/02/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
BH4	BH4	28/02/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
BH201	BH201	28/02/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
BH204	BH204	28/02/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
BH208	BH208	28/02/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
BH213	BH213	28/02/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
SW01	SW01	28/02/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
SW02	SW02	28/02/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
SW03	SW03	28/02/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
SW04	SW04	28/02/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
SW05	SW05	28/02/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
SW06	SW06	28/02/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
BD1/20200228	BH4	28/02/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	-	<0.0001
TRIP BLANK	-	28/02/2020	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	-	<0.0001
TRIP SPIKE	-	28/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater and Surfacewater Samples (2019)																																													
BD1/20190917	SW01	17/09/2019	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001																
BD1/20190924	BH208	24/09/2019	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH2	BH2	20/09/2019	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
BH201	BH201	24/09/2019	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
BH204	BH204	20/09/2019	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
BH208	BH208	24/09/2019	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
BH213	BH213	20/09/2019	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
BH4	BH4	20/09/2019	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
Rinsate	Rinsate	17/09/2019	<0.001	<0.01	0.008	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001																
SW01	SW01	17/09/2019	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
SW02	SW02	17/09/2019	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
SW03	SW03	17/09/2019	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.05	<0.0001
SW04	SW04	17/09/2019	<0.001	<0.01	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.01

Table G2: Groundwater and Surface Water Results

			Polychlorinated Biphenyls							Organochlorine Pesticides																		Organophosphorous Pesticides											
			Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Azinophos-methyl	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenitrothion	Malathion	Ronnel	Parathion
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PQL			**0.0001**	**0.0001**	**0.0001**	**0.0001**	**0.0001**	**0.0001**	**0.0001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.000006**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.000006**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**
ANZECC 2000 LOW RELIABILITY FW			0.000009	0.001	0.0003	0.0006	0.00003	0.00003	0.025																														
ANZECC 2000 Fresh Water						0.0003		0.00001										0.000006					0.00001		0.0002	0.00001													
ANZG (2018) Freshwater (unknown reliability) toxicant DGVs												0.000001 [b]							0.00001 [b]									0.000005 [b]											
ANZG (2018) Freshwater 95% toxicant DGVs						0.0003 [c]		0.00001 [c]						0.00003 [c]	0.00003 [c]			0.000006 [c]		0.00003 [c]	0.00003 [c]		0.00001 [c]		0.0002	0.00001 [c]			0.00001		0.00001		0.00001		0.0015		0.00002	0.00005		0.000004
NEPM 2013 Table 1A(4) HSL D GW Vapour Intrusion, Clay																																							
2-4m																																							
4-8m																																							
>8m																																							
Field_ID	**LocCode**	**Sampled_Date-Time**																																					
Groundwater and Surface Water Samples (April 2020)																																							
ABH01	ABH01	07/04/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
ABH02	ABH02	07/04/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
ABH03	ABH03	07/04/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
ABH08	ABH08	07/04/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
BH2	BH2	07/04/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
BH4	BH4	07/04/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
BH201	BH201	07/04/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
BH204	BH204	07/04/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
BH208	BH208	07/04/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
BH213	BH213	07/04/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SW01	SW01	07/04/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SW02	SW02	07/04/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SW03	SW03	07/04/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SW04	SW04	07/04/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SW05	SW05	07/04/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SW06	SW06	07/04/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
BD1/20200307	BH4	07/04/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
TRIP BLANK	-	07/04/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP SPIKE	-	07/04/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD2/20200307	-	07/04/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater and Surface Water Samples (February 2020)																																							
ABH01	ABH01	28/02/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
ABH02	ABH02	28/02/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
ABH03	ABH03	28/02/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
BH2	BH2	28/02/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
BH4	BH4	28/02/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
BH201	BH201	28/02/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
BH204	BH204	28/02/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
BH208	BH208	28/02/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
BH213	BH213	28/02/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SW01	SW01	28/02/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SW02	SW02	28/02/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SW03	SW03	28/02/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SW04	SW04	28/02/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SW05	SW05	28/02/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
SW06	SW06	28/02/2020	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
BD1/20200228	BH4	28/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP BLANK	-	28/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP SPIKE	-	28/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater and Surfacewater Samples (2019)																																							
BD1/20190917	SW01	17/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD1/20190924	BH208	24/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH2	BH2	20/09/2019	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000006	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	-	-	-	-	-	-	-	-	-	-
BH201	BH201	24/09/2019	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000006	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	-	-	-	-	-	-	-	-	-	-
BH204	BH204	20/09/2019	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000006	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	-	-	-	-	-	-	-	-	-	-
BH208	BH208	24/09/2019	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000006	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	-	-	-	-	-	-	-	-	-	-
BH213	BH213	20/09/2019	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000006	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	-	-	-	-	-	-	-	-	-	-
BH4	BH4	20/09/2019	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000006	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	-	-	-	-	-	-	-	-	-	-
Rinsate	Rinsate	17/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SW01	SW01	17/09/2019	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000006	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	-	-	-	-	-	-	-	-	-	-
SW02	SW02	17/09/2019	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000006	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	-	-	-	-	-	-	-	-	-	-
SW03	SW03	17/09/2019	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000006	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	-	-	-	-	-	-	-	-	-	-
SW04	SW04	17/09/2019	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000006	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	-	-	-	-	-	-	-	-	-	-
SW05	SW05	17/09/2019	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000006	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	-	-	-	-	-	-	-	-	-	-
SW06	SW06	17/09/2019	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000006	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-	-	-	-	-	-	-	-	-	-	-
TB		17/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trip Blank		24/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Groundwater and Surface Water Samples (2015)																																							
BD1/150515		15/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20	BH20	15/05/2015	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
BH2	BH2	15/05/2015	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
BH4	BH4	15/05/2015	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
DW1	DW1	15/05/2015	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.

Table G3: Soil Vapour Results

										2019 investigation						February 2020 Monitoring Round							April 2020 Monitoring Round						
									Location	BH201	BH204	BH208	BH213	BH2	BH4	BH201	BH204	BH208	BH213	BH2	BH4	BD1	BH201	BH204	BH208	BH213	BH2	BH4	IPA - CT
									Sample Date	20/09/2019	20/09/2019	20/09/2019	20/09/2019	20/09/2019	20/09/2019	26/02/2020	26/02/2020	26/02/2020	26/02/2020	26/02/2020	26/02/2020	26/02/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
				NEPM 2013 Table 1A(5) Comm/Ind D Soil Vapour HSL for Vapour Intrusion, Clay					NEPM 2013 Table 1A(2) Comm/Ind D Soil Vap VOCC HILs																					
Chemical Group	Chemical Name	Units	EQL	0-1m	1-2m	2-4m	4-8m	>8m																						
	Freon 113	µg/m3	3.8							<3.8	<3.8	<3.8	<7.7	<7.7	<7.7	<2.8	<2.8	<2.8	<6	<2.8	<2.8	<2.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	-
	2-Propanol	µg/m3	12							70	150	80	100	100	130	100	530	80	2400	190	430	100	30	920	30	220	120	30	11000
	Propene	µg/m3	0.9							96	120	14	16	12	10	8	7	7	8	6	5	8	<5.4	<5.4	<5.4	<7.2	<5.4	<5.4	-
TO15 in Canisters	1,2-Dichlorotetrafluoroethane	µg/m3	2.5							<2.5	<2.5	<2.5	<4.9	<4.9	<4.9	<2.5	<2.5	<2.5	<5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	-
TPH Air/ Air Phase Hydrocarbon	TPH C5 - C8 Aliphatic	µg/m3	200							20,000	25,000	17,000	34,000	40,000	39,000	<200	250	<200	1000	<200	<200	<200	<200	<200	<200	<200	<200	<200	-
	TPH C9 - C10 Aromatic	µg/m3	100							120	280	320	<200	240	<200	<100	<100	<100	<200	<100	<100	<100	<100	<100	<100	<100	<100	<100	-
	TPH C9 - C12 Aliphatic	µg/m3	50							450	430	1100	870	890	880	<50	<50	<50	<100	<50	<50	<50	<50	<50	<50	<50	<50	<50	-
Organic	Methane	%	0.01							<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-
TPH	F2-NAPHTHALENE	ug/m3	40	800000	NL	NL	NL	NL		250	320	860	600	570	620	<40	<40	140	<80	<40	<40	<40	<40	<40	<40	<40	<40	<40	-
	C6-C10 less BTEX (F1)	ug/m3	200	1000000	19000000	55000000	130000000	270000000		19,000	27,000	20,000	37,000	40,000	43,000	<200	<200	<200	<400	<200	<200	<200	<200	<200	<200	<200	<200	<200	-
BTEX	Benzene	µg/m3	1.6	5000	80000	230000	530000	1100000		170	280	170	400	420	470	10	10	6	8	10	9	10	<1.6	<1.6	<1.6	2	<1.6	<1.6	-
	Ethylbenzene	µg/m3	2.2	1800000	31000000	NL	NL	NL		290	260	300	550	630	530	3	6	3	6	4	6	3	2	2	<2.2	7	2	<2.2	-
	Toluene	µg/m3	1.9	6500000	100000000	NL	NL	NL		2200	2200	2100	4400	4800	4700	10	27	10	43	29	39	20	9	7	7	20	9	5	-
	Xylene (m & p)	µg/m3	4.3							680	670	750	1300	1500	1200	6	10	20	20	10	20	9	6	5	5	20	7	5	-
	Xylene (o)	µg/m3	2.2							220	270	320	380	460	350	2	5	8	6	5	6	3	3	2	2	6	3	2	-
MAH	1,2,4-trimethylbenzene	µg/m3	2.5							42	110	130	65	77	58	3	7	33	6	7	7	4	3	3	4	8	4	4	-
	1,3,5-trimethylbenzene	µg/m3	2.5							26	66	78	40	49	37	<2.5	3	20	<5	3	<2.5	<2.5	<2.5	<2.5	<2.5	3	<2.5	<2.5	-
	1-methyl-4 ethyl benzene	µg/m3	2.5							20	32	35	42	51	39	<2.5	<5	7	<5	<5	<2.5	<2.5	<2.5	<2.5	<2.5	3	<2.5	<2.5	-
	Styrene	µg/m3	2.1							<2.1	<2.1	<2.1	<4.3	5	<4.3	2	7	4	<4	<2.1	<2.1	4	2	3	3	2	3	2	-
Chlorinated Hydrocarbons	1,1,1-trichloroethane	µg/m3	2.7						230000	8	70	<2.7	<5.5	<5.5	<5.5	<2.7	<2.7	<2.7	<5	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	-
	1,1,2,2-tetrachloroethane	µg/m3	3.4							<3.4	<3.4	<3.4	<6.9	<6.9	<6.9	<3.4	<3.4	<3.4	<7	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	-
	1,1,2-trichloroethane	µg/m3	2.7							<2.7	<2.7	<2.7	<5.5	<5.5	<5.5	<2.7	<2.7	<2.7	<5	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	-
	1,1-dichloroethane	µg/m3	2							10	59	<2	<4	<4	<4	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<2	<2	<2	<2	<2	<2	-
	1,1-dichloroethene	µg/m3	2							<2	3	<2	<4	<4	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	<2	<2	<2	<2	-
	1,2-dichloroethane	µg/m3	2							<2	<2	<2	<4	<4	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	<2	<2	<2	<2	-
	1,2-dichloropropane	µg/m3	2.3							<2.3	<2.3	<2.3	<4.6	<4.6	<4.6	<2.3	<2.3	<2.3	<5	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	-
	Benzyl chloride	µg/m3	2.6							<2.6	<2.6	<2.6	<5.2	<5.2	<5.2	<2.6	<2.6	<2.6	<5	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	-
	Bromodichloromethane	µg/m3	3.4							<3.4	<3.4	<3.4	<6.7	<6.7	<6.7	<3.4	<3.4	<3.4	<7	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	-
	Bromoform	µg/m3	5.2							<5.2	<5.2	<5.2	<10	<10	<10	<5.2	<5.2	<5.2	<10	<5.2	<5.2	<5.2	<5.2	<5.2	<5.2	<5.2	<5.2	<5.2	-
	Carbon tetrachloride	µg/m3	3.1							<3.1	<3.1	<3.1	<6.3	<6.3	<6.3	<3.1	<3.1	<3.1	<6	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	-
	Chlorodibromomethane	µg/m3	1.6							<1.6	<1.6	<1.6	<3.3	<3.3	<3.3	<1.6	<1.6	<1.6	<3	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	-
	Chloroethane	µg/m3	1.3							52	230	<1.3	<2.6	<2.6	<2.6	<1.3	<1.3	<1.3	<3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	-
	Chloroform	µg/m3	2.4							<2.4	<2.4	<2.4	<4.9	<4.9	<4.9	<2.4	<2.4	<2.4	<5	<2.4	<2.4	<2.4	3	<2.4	<2.4	<2.4	<2.4	7	-
	Chloromethane	µg/m3	1							<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	2	2	2	4	2	1	2	<1	<2	<2	<2	<2	<1	-
	cis-1,2-dichloroethene	µg/m3	2						300	<2	<2	<2	<4	<4	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	<2	<2	<2	<2	-
	cis-1,3-dichloropropene	µg/m3	2.3							<2.3	<2.3	<2.3	<4.5	<4.5	<4.5	<2.3	<2.3	<2.3	<5	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	-
	Dichloromethane	µg/m3	17							200	200	230	200	200	210	<17	<17	<17	<30	<17	<17	<17	<17	<17	<17	<17	<17	<17	-
	Hexachlorobutadiene	µg/m3	5.3							<5.3	<5.3	<5.3	<11	<11	<11	<5.3	<5.3	<5.3	<10	<5.3	<5.3	<5.3	<5.3	<5.3	<5.3	<5.3	<5.3	<5.3	-
	Trichloroethene	µg/m3	2.7						80	<2.7	<2.7	<2.7	<5.4	<5.4	<5.4	<2.7	4	<2.7	10	3	<2.7	7	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	-
	Tetrachloroethene	µg/m3	3.4						8000	<3.4	<3.4	<3.4	<6.8	<6.8	<6.8	8	20	7	20	10	20	10	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	-
	trans-1,2-dichloroethene	µg/m3	2							<2	<2	<2	<4	<4	<4	<2	<2	<2	<4	<2	<2	<2	<2	<2	<2	<2	<2	<2	-
	trans-1,3-dichloropropene	µg/m3	2.3							<2.3	<2.3	<2.3	<4.5	<4.5	<4.5	<2.3	<2.3	<2.3	<5	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	-
	Vinyl chloride	µg/m3	1.3						100	<1.3	<2.6	<1.3	<2.6	<2.6	<2.6	<1.3	<1.3	<1.3	<3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	-
Halogenated Hydrocarbons	1,2-dibromoethane	µg/m3	3.8							<3.8	<3.8	<3.8	<7.7	<7.7	<7.7	<3.8	<3.8	<3.8	<8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	-
	Bromomethane	µg/m3	1.9							<1.9	<1.9	<1.9	<3.8	<3.8	<3.8	<1.9	<1.9	<1.9	<4	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	-
	Dichlorodifluoromethane	µg/m3	2.5							<2.5	<2.5	<2.5	<4.9	<4.9	<4.9	<2.5	<2.5	<2.5	<5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	-
	Trichlorofluoromethane	µg/m3	2.8							<2.8	<2.8	<2.8	<5.6	<5.6	<5.6	<2.8	<2.8	<2.8	<6	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8	-
Halogenated Benzenes	1,2,4-trichlorobenzene	µg/m3	3.7							<3.7	<3.7	<3.7	<7.4	<7.4	<7.4	<3.7	<3.7	<3.7	<7	<3.7	<3.7	<3.7	<3.7	<3.7	<3.7	<3.7	<3.7	<3.7	-
	1,2-dichlorobenzene	µg/m3	3							<3	<3	<3	<6	<6	<6	<3	<3	<3	<6	<3	<3	<3	<3	<3	<3	<3	<3	<3	-
	1,3-dichlorobenzene	µg/m3	3							<3	<3	<3	<6	<6	<6	<3	<3	<3	<6	<3	<3	<3	<3	<3	<3	<3	<3	<3	-
	1,4-dichlorobenzene	µg/m3	3							<3	<3	<3	<6	<6	<6	<3	<3	<3	<6	<3	<3	<3	<3	<3	<3	<3	<3	<3	-
	Chlorobenzene	µg/m3	2.3							<2.3	<2.3	<2.3	<4.6	<4.6	<4.6	<2.3	<2.3	<2.3	<5	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	-
VOCs	1,3-Butadiene	µg/m3	1.1							<1.1	<1.1	<1.1	<2.2	<2.2	<2.2	<1.1	<1.1	<1.1	<2	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	-
	Acrolein	µg/m3	11							<11	<11	<11	<23	<23	<23	<11	<11	<11	<20	<11	<11	<11	<11	<11	<11	<11	<11	<11	-
	Methyl Methacrylate	µg/m3	2							<2	<2	<2	<4.1	<4.1	<4.1	<2	<2	<2	<4	<2	<2	<2	<2	<2	<2	<2.0	<2	<2	-
Solvents	1,4-Dioxane	µg/m3	1.8							<1.8	<1.8	<1.8	<3.6	<3.6	<3.6	<1.8	<1.8	<1.8	<4	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	-
	Methyl Ethyl Ketone	µg/m3	15							<15	<15	<15	<29	<29	<29	<15	<15	<15	<30	<15	<15	<15	<15	<15	<15	<15	<15	<15	-
	2-hexanone (MBK)	µg/m3	2							<2	<2	<2	<4.1	<4.1	<4.1	<2	<2	<2	<4	<2	<2	<2	<2	<2	<2	<2	<2	<2	-
	4-Methyl-2-pentanone	µg/m3	20							<20	<20	<20	<41	<41	<41	<20	<20	<20	<40	<20	<20	<20	<20	<20	<20	<20	<20	<20	-
	Acetone	µg/m3	11.9							120	100	100	100	100	90	70	90	70	60	100	80	60	20	30	30	50	60	20	-
	Carbon disulfide	µg/m3	16							<16	<16	<16	<31	<31	<31	<16	<16	<16	<16	50	<16	<16	<16	<16	<16	<16	<16	<16	-
	Cyclohexane	µg/m3	1.7							190	410	200	430	530	540	<1.7	<1.7	<1.7	<3	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	4	<1.7	<1.7	-
	Ethanol	µg/m3	9							40	50	40	40	40	40	40	50	60	70	50	60	30	60	60	70	50	40	30	-
	Ethyl acetate	µg/m3	1.8							10	10	10	10	10	18	<1.8	<1.8	<1.8	<4	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	2	3	<1.8	-
	Heptane	µg/m3	2							270	620	270	660	750	820	<2	<2	<2	<4	<2	<2	<2	<2	<2	<2	<2	4	<2	-
	Hexane	µg/m3	1.8							32	140	41	83	100	110	3	6	<1.8	4	4	2	10	<1.8	<1.8	<1.8	5	<1.8	<1.8	-
	MTBE	µg/m3	1.8							<1.8	<1.8	<1.8	<3.6	<3.6	<3.6	<1.8	<1.8	<1.8	<4	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	-
	Tetrahydrofuran	µg/m3	1.5							32	59	16	22	31	51	<1.5	2	<1.5	8	<1.5	<1.5	<1.5	10	9	6	22	10	6	-
	Vinyl acetate	µg/m3	1.8							<1.8	<1.8	<1.8	<3.5	<3.5	<3.5	<1.8	<1.8	<1.8	<4	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	-
PAH/Phenols	Naphthalene	µg/m3	2.6	4000	85000	240000	560000	1200000		<2.6	<2.6	<2.6	<5.2	<5.2	<5.2	<2.6	<2.6	3	<5	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	-

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Table G4: Preliminary Waste Classification

						Metals										TRH				BTEX					PAH	
						Arsenic	Cadmium	Chromium	Copper	Lead	Lead TCLP	Mercury	Nickel	Nickel TCLP	Zinc	C6 - C9	C10 - C14	C15 - C28	C29-C36	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Benzo(a) pyrene	PAHs (Sum of total)
PQL						4	0.4	1	1	1	0.03	0.1	1	0.1	1	25	50	100	100	0.2	1	0.5	2	1	0.05	
Unit						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	mg/kg	mg/kg	mg/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
NSW EPA (2014) General Solid Waste (CT1)						100	20	100	-	100	-	4	40	-	-	650	10,000			10	600	288	1000		0.8	200
NSW EPA (2014) General Solid Waste (SCC1, TCLP1)						500	100	1900	-	1500	5	50	1050	2	-	650	10,000			18	1080	518	1800		10	200
NSW EPA (2014) Restricted Solid Waste (CT2)						400	80	400	-	400	-	16	160	-	-	2600	40,000			40	2400	1152	4000		3.2	800
NSW EPA (2014) Restricted Solid Waste (SCC2, TCLP2)						2000	400	7600	-	6000	20	200	4200	8	-	2600	40,000			72	4320	2073	7200		23	800
ANZECC (1992) - Background Ranges For Natural Material						0.2-30	0.04-2	0.5-110	1-190	<2-200	-	0.001-0.1	2-400	-	2-180	-	-	-	-	-	-	-	-		-	0.95-5
Location	**Depth (m)**	**Laboratory**	**Material**	**Report**	**Date**																					
Current Investigation																										
TP01	**0.1-0.5**	**ELS**	**Fill**	**236381**	04/02/2020	6	<0.4	7	29	16	-	<0.1	14	-	55	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.05	<0.05
TP02	**0-0.3**	**ELS**	**Fill**	**236381**	04/02/2020	5	<0.4	14	36	26	-	<0.1	16	-	130	<25	<50	<100	<100	0.3	2	4	7	4	<0.05	<0.05
TP03	**0-0.4**	**ELS**	**Fill**	**236381**	04/02/2020	7	<0.4	14	27	490	-	<0.1	14	-	93	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.05	<0.05
TP14/A1		**ELS**	**Material**	**236381**	04/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP04	**0-0.4**	**ELS**	**Fill**	**236381**	04/02/2020	6	<0.4	15	23	72	-	<0.1	12	-	150	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	0.2	0.92
TP04/A1		**ELS**	**Material**	**236381**	04/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP05	**0-0.3**	**ELS**	**Fill**	**236381**	04/02/2020	5	<0.4	16	22	27	-	<0.1	11	-	120	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.05	<0.05
BD1/20200204	**0-0.3**	**ALS**	**Fill**	**ES2004699**	04/02/2020	10	<1	15	24	36	-	<0.1	12	-	77	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP06	**0-0.3**	**ELS**	**Fill**	**236381**	03/02/2020	6	<0.4	21	37	25	-	<0.1	19	-	200	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	0.4	2.8
TP07	**0.3-0.8**	**ELS**	**Fill**	**236381**	03/02/2020	7	1	15	69	90	-	0.2	14	-	370	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	1.0	6.6
TP07/A1		**ELS**	**Material**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08	**0-0.5**	**ELS**	**Fill**	**236381**	03/02/2020	6	<0.4	11	25	26	-	<0.1	15	-	78	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.05	<0.05
TP08	**2-2.5**	**ELS**	**Fill**	**236381**	03/02/2020	15	<0.4	33	140	220	-	0.9	10	-	260	<25	<50	110	170	<0.2	<0.5	<1	<2	<1	0.4	2.4
TP08/A1		**ELS**	**Material**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP09	**1.5-2.0**	**ELS**	**Fill**	**236381**	03/02/2020	11	<0.4	17	35	28	-	<0.1	11	-	36	<25	<50	140	140	<0.2	<0.5	<1	<2	<1	2.6	22
TP09	**3.0-3.5**	**ELS**	**Fill**	**236381**	03/02/2020	9	1	26	55	58	-	<0.1	14	-	250	<25	120	1200	810	<0.2	<0.5	<1	<2	<1	<0.05	<0.05
TP09/A2		**ELS**	**Material**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP10	**0-0.5**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP10/A1		**ELS**	**Material**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP11	**1-1.5**	**ELS**	**Fill**	**236381**	03/02/2020	9	0.5	21	18	25	-	<0.1	5	-	32	<25	<50	<100	100	<0.2	<0.5	<1	<2	<1	0.92	5.3
TP11	**1.8-2.0**	**ELS**	**Fill**	**236381**	03/02/2020	6	<0.4	18	20	24	-	<0.1	14	-	44	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.05	<0.05
TP11	**1.7-2.1**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP12	**0-0.5**	**ELS**	**Fill**	**236381**	03/02/2020	5	<0.4	10	5	13	-	<0.1	2	-	22	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.05	<0.05
TP12	**2-2.5**	**ELS**	**Fill**	**236381**	03/02/2020	5	<0.4	17	19	28	-	<0.1	14	-	44	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.05	<0.05
TP13	**0-0.5**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP14	**0-0.5**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP14	**0.6-1.6**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP14	**1.5-1.7**	**ELS**	**Fill**	**236381**	03/02/2020	5	<0.4	10	36	130	-	0.2	7	-	260	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	2.5	18
TP14/A2		**ELS**	**Material**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP15	**1.5-1.7**	**ELS**	**Fill**	**236381**	03/02/2020	10	0.4	24	40	47	-	<0.1	11	-	160	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.05	<0.05
TP15	**1.5-2.0**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP15	**3.5-3.7**	**ELS**	**Fill**	**236381**	03/02/2020	6	<0.4	16	22	29	-	<0.1	15	-	74	<25	<50	<100	130	<0.2	<0.5	<1	<2	<1	<0.05	<0.05
TP15	**2.5-3.0**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD2/20200203		**ELS**	**Fill**	**236381**	03/02/2020	6	<0.4	12	7	12	-	<0.1	6	-	24	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.05	<0.05
TP14	**0-0.2**	**ELS**	**Fill**	**236381**	03/02/2020	6	<0.4	12	31	24	-	<0.1	16	-	89	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.05	<0.05
2019 Investigation																										
BH201	0.0-0.2	ELS	Fill	226390	16/09/2019	7	<0.4	18	18	28	-	<0.1	13	-	47	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	0.2
BD1/20190916	0.0-0.2	ELS	Fill	226390	16/09/2019	6	<0.4	14	22	25	-	<0.1	12	-	52	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	0.3
BH201 (laboratory duplicate)	0.0-0.2	ELS	Fill	226390	16/09/2019	7	<0.4	19	17	28	-	<0.1	13	-	49	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	0.3
BH201	0.8-1.0	ELS	Natural	226390	16/09/2019	6	<0.4	15	22	18	-	<0.1	15	-	47	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH202	0.0-0.2	ELS	Fill	226390	16/09/2019	<4	<0.4	25	28	37	-	<0.1	20	-	28	<25	<50	280	970	<0.2	<1	<0.5	<2	<1	0.5	8.6
BH202	0.4-0.45	ELS	Fill	226390	16/09/2019	5	<0.4	8	18	22	-	<0.1	5	-	34	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.1	0.83
BH203	0.4-0.5	ELS	Fill	226390	16/09/2019	4	<0.4	9	27	25	-	<0.1	6	-	33	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH203	0.9-1.0	ELS	Natural	226390	16/09/2019	5	<0.4	11	21	10	-	<0.1	7	-	29	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH204	0.0-0.2	ELS	Fill	226390	16/09/2019	5	<0.4	13	21	15	-	<0.1	10	-	33	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH204	0.4-0.5	ELS	Fill	226390	16/09/2019	<4	<0.4	8	13	8	-	<0.1	5	-	18	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH204	0.8-1.0	ELS	Fill	226390	16/09/2019	6	<0.4	15	11	19	-	<0.1	7	-	13	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH205	0.0-0.2	ELS	Fill	226390	16/09/2019	<4	<0.4	11	19	13	-	<0.1	5	-	19	<25	<50	100	270	<0.2	<1	<0.5	<2	<1	0.06	0.3

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Table G4: Preliminary Waste Classification

						Metals									TRH				BTEX					PAH	
						Arsenic	Cadmium	Chromium	Copper	Lead	Lead TCLP	Mercury	Nickel	Nickel TCLP	Zinc	C6 - C9	C10 - C14	C15 - C28	C29-C36	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Benzo(a) pyrene	PAHs (Sum of total)
PQL						4	0.4	1	1	1	0.03	0.1	1	0.1	1	25	50	100	100	0.2	1	0.5	2	1	0.05	
Unit						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	mg/kg	mg/kg	mg/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
NSW EPA (2014) General Solid Waste (CT1)						100	20	100	-	100	-	4	40	-	-	650	10,000			10	600	288	1000		0.8	200
NSW EPA (2014) General Solid Waste (SCC1, TCLP1)						500	100	1900	-	1500	5	50	1050	2	-	650	10,000			18	1080	518	1800		10	200
NSW EPA (2014) Restricted Solid Waste (CT2)						400	80	400	-	400	-	16	160	-	-	2600	40,000			40	2400	1152	4000		3.2	800
NSW EPA (2014) Restricted Solid Waste (SCC2, TCLP2)						2000	400	7600	-	6000	20	200	4200	8	-	2600	40,000			72	4320	2073	7200		23	800
ANZECC (1992) - Background Ranges For Natural Material						0.2-30	0.04-2	0.5-110	1-190	<2-200	-	0.001-0.1	2-400	-	2-180	-	-	-	-	-	-	-	-		-	0.95-5
Location	**Depth (m)**	**Laboratory**	**Material**	**Report**	**Date**																				
BH205	0.4-0.5	ELS	Fill	226390	16/09/2019	<4	<0.4	6	21	19	-	<0.1	3	-	31	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BD2/20190916	0.4-0.5	ALS	Fill	ES1930220	16/09/2019	11	<1	21	19	20	-	<0.1	13	-	455	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH205	0.9-1.0	ELS	Fill	226390	16/09/2019	9	<0.4	19	11	19	-	<0.1	9	-	29	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH205 (laboratory duplicate)	0.9-1.0	ELS	Fill	226390	16/09/2019	8	<0.4	17	11	20	-	<0.1	9	-	35	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH205	1.4-1.5	ELS	Natural	226390	16/09/2019	8	<0.4	15	19	14	-	<0.1	13	-	40	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH206	0.0-0.2	ELS	Fill	226390	16/09/2019	<4	<0.4	15	41	12	-	<0.1	11	-	57	<25	<50	430	810	<0.2	<1	<0.5	<2	<1	0.1	1.5
BH206	0.4-0.5	ELS	Fill	226390	16/09/2019	6	<0.4	10	31	23	-	<0.1	7	-	51	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH207	0.4-0.5	ELS	Fill	226390	16/09/2019	9	<0.4	11	18	16	-	<0.1	5	-	54	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BD3/20190916	0.4-0.5	ELS	Fill	226390	16/09/2019	8	<0.4	13	17	15	-	<0.1	4	-	36	<25	<50	<100	120	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH207	0.8-1.0	ELS	Natural	226390	16/09/2019	4	<0.4	17	17	17	-	<0.1	9	-	39	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH208	0.0-0.2	ELS	Fill	226858	24/09/2019	7	12	87	410	180	<0.03	0.2	71	<0.02	1600	<25	<50	<100	120	<0.2	<1	<0.5	<2	<1	0.06	0.06
BH208 (laboratory duplicate)	0.0-0.2	ELS	Fill	226858	24/09/2019	7	10	87	530	140	-	0.2	73	-	1500	<25	<50	<100	110	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH208	0.2-0.3	ELS	Fill	226858	24/09/2019	6	<0.4	25	25	19	-	<0.1	19	-	81	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH209	0.4-0.5	ELS	Natural	226858	24/09/2019	<4	<0.4	6	11	6	-	<0.1	3	-	9	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH210	0-0.2	ELS	Fill	226858	24/09/2019	<4	<0.4	9	7	12	-	<0.1	3	-	43	<25	<50	<100	<100	-	-	-	-	-	0.1	0.4
BH211	0.4-0.5	ELS	Fill	226390	16/09/2019	6	<0.4	14	23	22	-	<0.1	10	-	66	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.61	5.1
BH211 (laboratory duplicate)	0.4-0.5	ELS	Fill	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH211	1.6-1.7	ELS	Fill	226390	16/09/2019	9	<0.4	13	24	44	-	<0.1	7	-	79	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH212	0.0-0.2	ELS	Fill	226390	16/09/2019	7	<0.4	13	22	27	-	<0.1	12	-	47	<25	<50	<100	110	<0.2	<1	<0.5	<2	<1	0.4	3.6
BH212 (laboratory duplicate)	0.0-0.2	ELS	Fill	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH212	0.4-0.5	ELS	Fill	226858	16/09/2019	9	<0.4	11	23	23	-	<0.1	4	-	34	<25	<50	<100	<100	-	-	-	-	-	<0.05	<0.05
BD4/20190916	0.4-0.5	ALS	Fill	ES1930220	16/09/2019	12	<1	14	28	34	-	<0.1	5	-	50	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH212	0.9-1.0	ELS	Fill	226390	16/09/2019	5	<0.4	12	17	16	-	<0.1	8	-	35	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.09	0.75
BH212 (laboratory duplicate)	0.9-1.0	ELS	Fill	226390	16/09/2019	6	<0.4	12	28	23	-	<0.1	10	-	53	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH212	1.9-2.0	ELS	Fill	226390	16/09/2019	8	<0.4	17	11	18	-	<0.1	3	-	15	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH213	0.4-0.5	ELS	Fill	226858	18/09/2019	7	<0.4	12	23	200	0.35	0.2	8	-	160	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.2	1.7
BH213	0.9-1.0	ELS	Fill	226858	18/09/2019	6	<0.4	14	16	38	-	<0.1	14	-	48	<25	<50	<100	<100	-	-	-	-	-	0.2	1.7
BH214	0.1-0.2	ELS	Fill	226390	16/09/2019	6	<0.4	12	29	15	-	<0.1	9	-	120	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH214	0.3-0.4	ELS	Natural	226390	16/09/2019	5	<0.4	14	24	15	-	<0.1	7	-	57	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BD1A/20190916	0.3-0.4	ELS	Natural	226390	16/09/2019	<4	<0.4	14	23	16	-	<0.1	9	-	57	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH215	0.2-0.3	ELS	Natural	226390	16/09/2019	10	<0.4	7	21	10	-	<0.1	3	-	42	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH216	0.1-0.2	ELS	Fill	226390	16/09/2019	4	<0.4	11	41	150	0.2	<0.1	48	0.05	680	<25	<50	120	410	<0.2	<1	<0.5	<2	<1	0.06	0.06
BH217	0.2-0.3	ELS	Fill	226390	16/09/2019	8	13	38	230	280	<0.03	<0.1	15	-	3100	<25	<50	180	320	<0.2	<1	<0.5	<2	<1	0.09	0.2
BH217	0.5-0.6	ELS	Fill	226390	16/09/2019	7	<0.4	20	19	27	-	<0.1	11	-	130	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH219	0.3-0.4	ELS	Natural	226390	16/09/2019	10	<0.4	14	16	12	-	<0.1	13	-	43	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH219 (laboratory duplicate)	0.3-0.4	ELS	Natural	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH220	0.1-0.2	ELS	Fill	226390	16/09/2019	<4	<0.4	79	25	4	-	<0.1	95	0.1	53	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH220	0.2-0.3	ELS	Fill	226390	16/09/2019	8	<0.4	14	13	15	-	<0.1	6	-	24	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH220	0.4-0.5	ELS	Natural	226390	16/09/2019	7	<0.4	18	11	19	-	<0.1	6	-	17	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH220 (laboratory duplicate)	0.4-0.5	ELS	Natural	226390	16/09/2019	7	<0.4	19	11	18	-	<0.1	5	-	17	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH221	0.4-0.5	ELS	Natural	226390	16/09/2019	4	<0.4	18	20	14	-	<0.1	8	-	33	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BD2A/20190916	0.4-0.5	ALS	Natural	ES1930220	16/09/2019	6	<1	21	26	17	-	<0.1	10	-	42	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH222	0.0-0.1	ELS	Fill	226390	16/09/2019	<4	<0.4	4	59	5	-	<0.1	7	-	640	<25	<50	300	1000	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH223	0.1-0.2	ELS	Fill	226390	16/09/2019	<4	<0.4	3	110	3	-	<0.1	6	-	710	<25	<50	260	530	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH224	0.3-0.4	ELS	Natural	226390	16/09/2019	5	<0.4	9	25	8	-	<0.1	5	-	36	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
BH225	0.1-0.2	ELS	Fill	226390	16/09/2019	<4	<0.4	78	87	9	-	<0.1	38	-	910	<25	<50	210	550	<0.2	<1	<0.5	<2	<1	<0.05	<0.05
2015 Investigation																										
BD4-300415	-	ELS	Soil	127666	5/13/2015	6	<0.4	19	26	15	-	<0.1	12	-	33	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	-	-
BD4-300415	-	ELS	Soil	127666	5/13/2015	-	-	-	-	-	-	-	-	-	-	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	-	-
BD2-040515	-	ELS	Soil	127666	5/13/2015	6	<0.4	13	14	16	-	<0.1	6	-	63	<25	<50	<100	140	<0.2	<1	<0.5	<2	<1	-	-
BD3-050515	-	ELS	Soil	127666	5/13/2015	10	<0.4	20	19	22	-	<0.1	10	-	30	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	-	-

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Table G4: Preliminary Waste Classification

						Metals									TRH				BTEX					PAH	
						Arsenic	Cadmium	Chromium	Copper	Lead	Lead TCLP	Mercury	Nickel	Nickel TCLP	Zinc	C6 - C9	C10 - C14	C15 - C28	C29-C36	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Benzo(a) pyrene	PAHs (Sum of total)
PQL						4	0.4	1	1	1	0.03	0.1	1	0.1	1	25	50	100	100	0.2	1	0.5	2	1	0.05	
Unit						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	mg/kg	mg/kg	mg/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
NSW EPA (2014) General Solid Waste (CT1)						100	20	100	-	100	-	4	40	-	-	650	10,000			10	600	288	1000		0.8	200
NSW EPA (2014) General Solid Waste (SCC1, TCLP1)						500	100	1900	-	1500	5	50	1050	2	-	650	10,000			18	1080	518	1800		10	200
NSW EPA (2014) Restricted Solid Waste (CT2)						400	80	400	-	400	-	16	160	-	-	2600	40,000			40	2400	1152	4000		3.2	800
NSW EPA (2014) Restricted Solid Waste (SCC2, TCLP2)						2000	400	7600	-	6000	20	200	4200	8	-	2600	40,000			72	4320	2073	7200		23	800
ANZECC (1992) - Background Ranges For Natural Material						0.2-30	0.04-2	0.5-110	1-190	<2-200	-	0.001-0.1	2-400	-	2-180	-	-	-	-	-	-	-	-		-	0.95-5
Location	Depth (m)	Laboratory	Material	Report	Date																					
BD1-060515	-	ELS	Soil	127666	5/13/2015	9	0.5	21	14	44	-	<0.1	4	-	38	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	-	-
BH1	0-0.1	ELS	Soil	127666	5/13/2015	5	<0.4	16	26	39	-	<0.1	12	-	52	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.3	3.1
BH1	0-0.1	ELS	Soil	127666	5/13/2015	5	<0.4	15	28	26	-	<0.1	10	-	44	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.3	2.9
BH2	0-0.1	ELS	Soil	127666	5/13/2015	6	<0.4	14	15	17	-	<0.1	7	-	21	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	NIL (+)VE
BH2	0.4-0.5	ELS	Soil	127666	5/12/2015	5	<0.4	11	17	15	-	<0.1	10	-	28	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	NIL (+)VE
BH3	0-0.1	ELS	Soil	127666	5/13/2015	7	<0.4	16	15	60	-	0.1	5	-	58	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.1	1.4
BH3	0.4-0.5	ELS	Soil	127666	5/12/2015	8	<0.4	18	13	42	-	<0.1	5	-	42	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.2	2.5
BH4	0-0.1	ELS	Soil	127666	5/13/2015	5	<0.4	10	21	49	-	0.2	7	-	45	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	1	7.9
BH4	0.9-1	ELS	Soil	127666	5/12/2015	10	<0.4	19	15	26	-	<0.1	8	-	25	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.07	0.3
BH5	0.0-0.1	ELS	Soil	127666	5/13/2015	6	<0.4	19	19	23	-	<0.1	8	-	26	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	NIL (+)VE
BH6	0-0.1	ELS	Soil	127666	5/13/2015	7	<0.4	20	24	31	-	<0.1	13	-	55	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.3	3.9
BH7	0-0.1	ELS	Soil	127666	5/12/2015	6	<0.4	17	43	160	-	0.4	13	-	130	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.74	6.9
BH7	0.8-1.0	ELS	Soil	127666	5/13/2015	6	1	16	25	50	-	0.1	9	-	62	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.76	8.1
BH7	0.8-1.0	ELS	Soil	127666	5/13/2015	6	2	18	32	52	-	0.2	15	-	90	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.66	6.3
BH7	2.4-2.5	ELS	Soil	127666	5/13/2015	12	0.4	16	23	62	-	<0.1	7	-	150	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	NIL (+)VE
BH8	0-0.1	ELS	Soil	127666	5/13/2015	7	<0.4	18	18	24	-	<0.1	12	-	33	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	NIL (+)VE
BH9	0-0.1	ELS	Soil	127666	5/13/2015	7	<0.4	8	39	16	-	<0.1	28	-	100	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	NIL (+)VE
BH9	1.5-1.6	ELS	Soil	127666	5/13/2015	9	<0.4	19	21	26	-	<0.1	13	-	43	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.08	0.08
BH9	2.4-2.5	ELS	Soil	127666	5/13/2015	7	<0.4	18	22	24	-	<0.1	13	-	44	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.2	1.5
BH9	5.4-5.5	ELS	Soil	127666	5/13/2015	4	<0.4	12	18	10	-	<0.1	7	-	22	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	NIL (+)VE
BH10	0-0.1	ELS	Soil	127666	5/13/2015	10	<0.4	18	16	25	-	<0.1	9	-	27	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	NIL (+)VE
BH11	0-0.1	ELS	Soil	127666	5/13/2015	4	4	200	330	78	-	<0.1	150	-	290	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.4	4.2
BH11	0-0.1	ELS	Soil	127666	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH12	0-0.1	ELS	Soil	127666	5/13/2015	<4	<0.4	85	24	7	-	<0.1	77	-	54	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	NIL (+)VE
BH12	0-0.1	ELS	Soil	127666	5/13/2015	<4	<0.4	72	25	8	-	<0.1	68	-	49	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	NIL (+)VE
BH12	0.4-0.5	ELS	Soil	127666	5/13/2015	11	<0.4	13	34	19	-	<0.1	16	-	82	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	NIL (+)VE
BH13	0-0.1	ELS	Soil	127666	5/13/2015	5	<0.4	9	16	14	-	<0.1	7	-	34	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	NIL (+)VE
BH13	0.4-0.5	ELS	Soil	127666	5/12/2015	7	0.4	14	41	140	-	0.2	8	-	190	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.5	5.2
BH14	0-0.1	ELS	Soil	127666	5/13/2015	7	<0.4	11	24	16	-	<0.1	7	-	48	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	NIL (+)VE
BH14	0.7-0.8	ELS	Soil	127666	5/13/2015	5	<0.4	15	15	43	-	0.2	4	-	37	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.3	3.2
BH14	1.4-1.5	ELS	Soil	127666	5/13/2015	<4	<0.4	20	9	15	-	<0.1	2	-	11	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	NIL (+)VE
BH15	0-0.1	ELS	Soil	127666	5/13/2015	6	<0.4	18	18	19	-	<0.1	10	-	81	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.3	2.7
BH15	0.3-0.4	ELS	Soil	127666	5/13/2015	5	<0.4	27	22	14	-	<0.1	27	-	79	<25	<50	<100	160	<0.2	<1	<0.5	<2	<1	3.4	17
BH15	1.4-1.5	ELS	Soil	127666	5/13/2015	5	<0.4	15	30	13	-	<0.1	10	-	53	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.3	1.2
BH16	0-0.1	ELS	Soil	127666	5/13/2015	<4	<0.4	20	20	13	-	<0.1	15	-	58	<25	<50	<100	120	<0.2	<1	<0.5	<2	<1	0.2	2
BH16	0-0.1	ELS	Soil	127666	5/13/2015	<4	<0.4	18	27	15	-	<0.1	10	-	45	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.3	2.5
BH17	0-0.1	ELS	Soil	127666	5/13/2015	7	<0.4	15	15	26	-	<0.1	11	-	37	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	NIL (+)VE
BH18	0-0.1	ELS	Soil	127666	5/13/2015	<4	<0.4	9	54	6	-	<0.1	38	-	92	<25	<50	<100	170	<0.2	<1	<0.5	<2	<1	<0.05	NIL (+)VE
BH19	0-0.1	ELS	Soil	127666	5/13/2015	<4	<0.4	12	50	18	-	<0.1	15	-	65	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	0.1	1.3
BH19	0.5-0.6	ELS	Soil	127666	5/13/2015	6	<0.4	18	31	15	-	<0.1	12	-	27	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	NIL (+)VE
BH20	0-0.1	ELS	Soil	127666	5/13/2015	7	<0.4	18	21	21	-	<0.1	13	-	36	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	NIL (+)VE
B1	-	ELS	Plastic Scrap	127324-A	5/8/2015	28	1	2	8	51000	-	0.3	2	-	890	-	-	-	-	<0.2	<1	<0.5	<2	<1	-	-
B1	-	ELS	Plastic Scrap	127324-A	5/8/2015	28	2	1	13	86000	-	0.1	3	-	20	-	-	-	-	<0.2	<1	<0.5	<2	<1	-	-
B1 - TRIPLICATE	-	ELS	Material	127324-A	-	64	3	2	10	85000	-	0.7	3	-	13	-	-	-	-	-	-	-	-	-	-	-
S1	0-0.15	ELS	Soil	127324	5/6/2015	6	<0.4	16	16	56	-	<0.1	7	-	320	-	-	-	-	-	-	-	-	-	-	-
S1	0-0.15	ELS	Soil	127324	5/6/2015	7	<0.4	17	19	57	-	<0.1	8	-	340	-	-	-	-	-	-	-	-	-	-	-
S2	0-0.15	ELS	Soil	127324	5/6/2015	12	<0.4	15	27	13	-	<0.1	7	-	28	-	-	-	-	-	-	-	-	-	-	-
S3	0-0.15	ELS	Soil	127324	5/6/2015	4	<0.4	7	61	12	-	<0.1	19	-	360	-	-	-	-	-	-	-	-	-	-	-
S4	0-0.15	ELS	Soil	127324	5/6/2015	<4	<0.4	7	44	13	-	<0.1	16	-	140	-	-	-	-	-	-	-	-	-	-	-
S5	0-0.15	ELS	Soil	127324	5/6/2015	<4	3	38	120	200	-	0.2	24	-	6200	-	-	-	-	-	-	-	-	-	-	-
S6	0-0.15	ELS	Soil	127324	5/6/2015	<4	0.5	27	110	62	-	<0.1	35	-	520	<25	<50	660	890	<0.2	<1	<0.5	<2	<1	0.2	2.7

Table G4: Preliminary Waste Classification

							Metals									TRH				BTEX						PAH	
							Arsenic	Cadmium	Chromium	Copper	Lead	Lead TCLP	Mercury	Nickel	Nickel TCLP	Zinc	C6 - C9	C10 - C14	C15 - C28	C29-C36	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Benzo(a) pyrene	PAHs (Sum of total)
PQL							4	0.4	1	1	1	0.03	0.1	1	0.1	1	25	50	100	100	0.2	1	0.5	2	1	0.05	
Unit							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	mg/kg	mg/kg	mg/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
NSW EPA (2014) General Solid Waste (CT1)							100	20	100	-	100	-	4	40	-	-	650	10,000			10	600	288	1000		0.8	200
NSW EPA (2014) General Solid Waste (SCC1, TCLP1)							500	100	1900	-	1500	5	50	1050	2	-	650	10,000			18	1080	518	1800		10	200
NSW EPA (2014) Restricted Solid Waste (CT2)							400	80	400	-	400	-	16	160	-	-	2600	40,000			40	2400	1152	4000		3.2	800
NSW EPA (2014) Restricted Solid Waste (SCC2, TCLP2)							2000	400	7600	-	6000	20	200	4200	8	-	2600	40,000			72	4320	2073	7200		23	800
ANZECC (1992) - Background Ranges For Natural Material							0.2-30	0.04-2	0.5-110	1-190	<2-200	-	0.001-0.1	2-400	-	2-180	-	-	-	-	-	-	-	-		-	0.95-5
Location	**Depth (m)**	**Laboratory**	**Material**	**Report**	**Date**																						
S6	0-0.15	ELS	Soil	127324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.7	30
S7	0-0.15	ELS	Soil	127324	5/6/2015	<4	0.5	32	60	69	-	<0.1	57	-	400	-	-	-	-	-	-	-	-	-	-	-	-
S8	0-0.15	ELS	Soil	127324	5/6/2015	<4	<0.4	12	34	15	-	<0.1	15	-	170	-	-	-	-	-	-	-	-	-	-	-	-
S9	0-0.15	ELS	Soil	127324	5/6/2015	<4	<0.4	16	61	25	-	<0.1	52	-	230	-	-	-	-	-	-	-	-	-	-	-	-
S10	0-0.15	ELS	Soil	127324	5/6/2015	<4	0.7	31	89	42	-	<0.1	49	-	480	-	-	-	-	-	-	-	-	-	-	-	-
S11	0-0.15	ELS	Soil	127324	5/6/2015	<4	0.5	26	74	200	-	<0.1	65	-	750	-	-	-	-	-	-	-	-	-	-	-	-
S11	0-0.15	ELS	Soil	127324	5/6/2015	<4	0.5	20	68	320	-	<0.1	63	-	720	-	-	-	-	-	-	-	-	-	-	-	-
S12	0-0.15	ELS	Soil	127324	5/6/2015	<4	<0.4	7	71	3700	-	<0.1	11	-	32	-	-	-	-	-	-	-	-	-	-	-	-
S13	0-0.15	ELS	Soil	127324	5/6/2015	7	0.5	20	12	95	-	<0.1	6	-	66	-	-	-	-	-	-	-	-	-	-	-	-
S14	0-0.15	ELS	Soil	127324	5/6/2015	<4	<0.4	21	58	14	-	<0.1	27	-	37	-	-	-	-	-	-	-	-	-	-	-	-
S15	0-0.15	ELS	Soil	127324	5/6/2015	7	0.6	23	57	110	-	<0.1	17	-	250	-	-	-	-	-	-	-	-	-	-	-	-
S16	0-0.15	ELS	Soil	127324	5/6/2015	<4	<0.4	<1	41	<1	-	<0.1	4	-	260	-	-	-	-	-	-	-	-	-	-	-	-
S17	0-0.15	ELS	Soil	127324	5/6/2015	6	<0.4	23	65	34	-	<0.1	23	-	240	-	-	-	-	-	-	-	-	-	-	-	-
BD1/300415	-	ELS	Soil	127324	-	<4	<0.4	6	49	9	-	<0.1	18	-	460	<25	<50	<100	220	<0.2	<1	<0.5	<2	<1	-	-	-
BD2/300415	-	ELS	Soil	127324	-	<4	0.4	27	89	51	-	<0.1	31	-	430	<25	<50	580	890	<0.2	<1	<0.5	<2	<1	-	-	-

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Table G4: Preliminary Waste Classification

						Organochlorine Pesticides																		Organophosphorus Pesticides						Polychlorinated Biphenyls								Asb
						4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Chlorpyrifos	Dichlorvos	Dimethoate	Ethion	Fenitrothion	Malathion	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Phenol	Asbestos ID
PQL						0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	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	5	0.1 g/kg
Unit						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
NSW EPA (2014) General Solid Waste (CT1)						<50 **										60			<50 **				-	4	250 *				<50 ***							288	-
NSW EPA (2014) General Solid Waste (SCC1, TCLP1)						<50**										108			<50**				-	7.5	250 *				<50 ***							518	-
NSW EPA (2014) Restricted Solid Waste (CT2)						<50**										240			<50**				-	16	1000 *				<50 ***							1152	-
NSW EPA (2014) Restricted Solid Waste (SCC2, TCLP2)						<50**										432			<50**				-	30	1000 *				<50 ***							2073	-
ANZECC (1992) - Background Ranges For Natural Material						-										-			-				-	-	-				-							-	-
Location	**Depth (m)**	**Laboratory**	**Material**	**Report**	**Date**																																	
TP01	**0.1-0.5**	**ELS**	**Fill**	**236381**	04/02/2020	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<5	NAD
TP02	**0-0.3**	**ELS**	**Fill**	**236381**	04/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
TP03	**0-0.4**	**ELS**	**Fill**	**236381**	04/02/2020	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<5	NAD
TP14/A1		**ELS**	**Material**	**236381**	04/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Detected
TP04	**0-0.4**	**ELS**	**Fill**	**236381**	04/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
TP04/A1		**ELS**	**Material**	**236381**	04/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Detected
TP05	**0-0.3**	**ELS**	**Fill**	**236381**	04/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BD1/20200204	**0-0.3**	**ALS**	**Fill**	**ES2004699**	04/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP06	**0-0.3**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
TP07	**0.3-0.8**	**ELS**	**Fill**	**236381**	03/02/2020	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<5	NAD
TP07/A1		**ELS**	**Material**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Detected
TP08	**0-0.5**	**ELS**	**Fill**	**236381**	03/02/2020	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<5	NAD
TP08	**2-2.5**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
TP08/A1		**ELS**	**Material**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Detected
TP09	**1.5-2.0**	**ELS**	**Fill**	**236381**	03/02/2020	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<5	NAD
TP09	**3.0-3.5**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
TP09/A2		**ELS**	**Material**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Detected
TP10	**0-0.5**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Detected
TP10/A1		**ELS**	**Material**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Detected
TP11	**1-1.5**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
TP11	**1.8-2.0**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP11	**1.7-2.1**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
TP12	**0-0.5**	**ELS**	**Fill**	**236381**	03/02/2020	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<5	NAD
TP12	**2-2.5**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
TP13	**0-0.5**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
TP14	**0-0.5**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
TP14	**0.6-1.6**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
TP14	**1.5-1.7**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP14/A2		**ELS**	**Material**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
TP15	**1.5-1.7**	**ELS**	**Fill**	**236381**	03/02/2020	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<5	-
TP15	**1.5-2.0**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
TP15	**3.5-3.7**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP15	**2.5-3.0**	**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BD2/20200203		**ELS**	**Fill**	**236381**	03/02/2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP14	**0-0.2**	**ELS**	**Fill**	**236381**	03/02/2020	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<5	-
2019 Investigation																																						
BH201	0.0-0.2	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<5	NAD
BD1/20190916	0.0-0.2	ELS	Fill	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH201 (laboratory duplicate)	0.0-0.2	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<5	-
BH201	0.8-1.0	ELS	Natural	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH202	0.0-0.2	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<5	NAD
BH202	0.4-0.45	ELS	Fill	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH203	0.4-0.5	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<5	NAD
BH203	0.9-1.0	ELS	Natural	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH204	0.0-0.2	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<5	NAD
BH204	0.4-0.5	ELS	Fill	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH204	0.8-1.0	ELS	Fill	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH205	0.0-0.2	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<5	NAD

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Table G4: Preliminary Waste Classification

							Organochlorine Pesticides																Organophosphorus Pesticides						Polychlorinated Biphenyls								Asb
							4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Chlorpyrifos	Dichlorvos	Dimethoate	Ethion	Fenitrothion	Malathion	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Phenol	Asbestos ID
PQL							0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	5	0.1 g/kg
Unit							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
NSW EPA (2014) General Solid Waste (CT1)							<50 **										60			<50 **					-	4	250 *				<50 ***							288	-
NSW EPA (2014) General Solid Waste (SCC1, TCLP1)							<50**										108			<50**					-	7.5	250 *				<50 ***							518	-
NSW EPA (2014) Restricted Solid Waste (CT2)							<50**										240			<50**					-	16	1000 *				<50 ***							1152	-
NSW EPA (2014) Restricted Solid Waste (SCC2, TCLP2)							<50**										432			<50**					-	30	1000 *				<50 ***							2073	-
ANZECC (1992) - Background Ranges For Natural Material							-										-			-					-	-	-				-							-	-
Location	**Depth (m)**	**Laboratory**	**Material**	**Report**	**Date**																																		
BH205	0.4-0.5	ELS	Fill	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BD2/20190916	0.4-0.5	ALS	Fill	ES1930220	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH205	0.9-1.0	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH205 (laboratory duplicate)	0.9-1.0	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
BH205	1.4-1.5	ELS	Natural	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH206	0.0-0.2	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH206	0.4-0.5	ELS	Fill	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH207	0.4-0.5	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BD3/20190916	0.4-0.5	ELS	Fill	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH207	0.8-1.0	ELS	Natural	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH208	0.0-0.2	ELS	Fill	226858	24/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH208 (laboratory duplicate)	0.0-0.2	ELS	Fill	226858	24/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
BH208	0.2-0.3	ELS	Fill	226858	24/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH209	0.4-0.5	ELS	Natural	226858	24/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH210	0-0.2	ELS	Fill	226858	24/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH211	0.4-0.5	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH211 (laboratory duplicate)	0.4-0.5	ELS	Fill	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH211	1.6-1.7	ELS	Fill	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH212	0.0-0.2	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH212 (laboratory duplicate)	0.0-0.2	ELS	Fill	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH212	0.4-0.5	ELS	Fill	226858	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BD4/20190916	0.4-0.5	ALS	Fill	ES1930220	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH212	0.9-1.0	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH212 (laboratory duplicate)	0.9-1.0	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
BH212	1.9-2.0	ELS	Fill	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH213	0.4-0.5	ELS	Fill	226858	18/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH213	0.9-1.0	ELS	Fill	226858	18/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH214	0.1-0.2	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH214	0.3-0.4	ELS	Natural	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BD1A/20190916	0.3-0.4	ELS	Natural	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH215	0.2-0.3	ELS	Natural	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH216	0.1-0.2	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH217	0.2-0.3	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH217	0.5-0.6	ELS	Fill	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH219	0.3-0.4	ELS	Natural	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	NAD
BH219 (laboratory duplicate)	0.3-0.4	ELS	Natural	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH220	0.1-0.2	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH220	0.2-0.3	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH220	0.4-0.5	ELS	Natural	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH220 (laboratory duplicate)	0.4-0.5	ELS	Natural	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
BH221	0.4-0.5	ELS	Natural	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BD2A/20190916	0.4-0.5	ALS	Natural	ES1930220	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH222	0.0-0.1	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH223	0.1-0.2	ELS	Fill	226390	16/09/2019	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH224	0.3-0.4	ELS	Natural	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH225	0.1-0.2	ELS	Fill	226390	16/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
2015 Investigation																																							
BD4-300415	-	ELS	Soil	127666	5/13/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD4-300415	-	ELS	Soil	127666	5/13/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD2-040515	-	ELS	Soil	127666	5/13/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD3-050515	-	ELS	Soil	127666	5/13/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Table G4: Preliminary Waste Classification

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Table G4: Preliminary Waste Classification

	Organochlorine Pesticides																			Organophosphorus Pesticides						Polychlorinated Biphenyls							Phenol	Asb
	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Chlorpyrifos	Dichlorvos	Dimethoate	Ethion	Fenitrothion	Malathion	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260		Asbestos ID
PQL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	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	5	0.1 g/kg
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
NSW EPA (2014) General Solid Waste (CT1)	<50 **										60			<50 **					-	4	250 *					<50 ***							288	-
NSW EPA (2014) General Solid Waste (SCC1, TCLP1)	<50**										108			<50**					-	7.5	250 *					<50 ***							518	-
NSW EPA (2014) Restricted Solid Waste (CT2)	<50**										240			<50**					-	16	1000 *					<50 ***							1152	-
NSW EPA (2014) Restricted Solid Waste (SCC2, TCLP2)	<50**										432			<50**					-	30	1000 *					<50 ***							2073	-
ANZECC (1992) - Background Ranges For Natural Material	-										-			-					-	-	-					-							-	-

Location	Depth (m)	Laboratory	Material	Report	Date																																
S6	0-0.15	ELS	Soil	127324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S7	0-0.15	ELS	Soil	127324	5/6/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	NAD
S8	0-0.15	ELS	Soil	127324	5/6/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	NAD
S9	0-0.15	ELS	Soil	127324	5/6/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	NAD
S10	0-0.15	ELS	Soil	127324	5/6/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
S11	0-0.15	ELS	Soil	127324	5/6/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
S11	0-0.15	ELS	Soil	127324	5/6/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
S12	0-0.15	ELS	Soil	127324	5/6/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
S13	0-0.15	ELS	Soil	127324	5/6/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
S14	0-0.15	ELS	Soil	127324	5/6/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
S15	0-0.15	ELS	Soil	127324	5/6/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	NAD
S16	0-0.15	ELS	Soil	127324	5/6/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	NAD
S17	0-0.15	ELS	Soil	127324	5/6/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	NAD
BD1/300415	-	ELS	Soil	127324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD2/300415	-	ELS	Soil	127324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix H

Laboratory Certificates

and Chain of Custody

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 236381

Client Details

Client	Douglas Partners Pty Ltd
Attention	Joel James-Hall
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**84822.03, Eastern Creek**
Number of Samples	29 Soil, 7 Material
Date samples received	10/02/2020
Date completed instructions received	10/02/2020

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	17/02/2020
Date of Issue	17/02/2020

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Asbestos Approved By
Analysed by Asbestos Approved Identifier: Wonnie Condos
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Diego Bigolin, Team Leader, Inorganics
Giovanni Agosti, Group Technical Manager
Jaimie Loa-Kum-Cheung, Metals Supervisor
Josh Williams, Senior Chemist
Lucy Zhu, Asbestos Supervisor
Priya Samarawickrama, Senior Chemist
Steven Luong, Organics Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		236381-1	236381-2	236381-3	236381-5	236381-7
Your Reference	UNITS	TP01/0.1-0.5	TP02/0-0.3	TP03/0-0.4	TP04/0-0.4	TP05/0-0.3
Date Sampled		04/02/2020	04/02/2020	04/02/2020	04/02/2020	04/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	0.3	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	2	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	4	<1	<1	<1
m+p-xylene	mg/kg	<2	7	<2	<2	<2
o-Xylene	mg/kg	<1	4	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	11	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	88	76	100	78	86

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		236381-8	236381-9	236381-11	236381-12	236381-14
Your Reference	UNITS	TP06/0-0.3	TP07/0.3-0.8	TP08/0-0.5	TP08/2-2.5	TP09/1.5-2.0
Date Sampled		03/02/2020	03/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	106	98	87	85	96

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		236381-15	236381-19	236381-20	236381-22	236381-23
Your Reference	UNITS	TP09/3.0-3.5	TP11/1-1.5	TP11/1.8-2.0	TP12/0-0.5	TP12/2-2.5
Date Sampled		03/02/2020	03/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	109	103	95	86	95

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		236381-27	236381-29	236381-31	236381-33	236381-34
Your Reference	UNITS	TP14/1.5-1.7	TP15/1.5-1.7	TP15/3.5-3.7	Trip Spike	Trip Blank
Date Sampled		03/02/2020	03/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
TRH C_6 - C_9	mg/kg	<25	<25	<25	[NA]	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	[NA]	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	[NA]	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	102%	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	100%	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	108%	<1
m+p-xylene	mg/kg	<2	<2	<2	108%	<2
o-Xylene	mg/kg	<1	<1	<1	107%	<1
naphthalene	mg/kg	<1	<1	<1	[NA]	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	[NA]	<3
Surrogate aaa-Trifluorotoluene	%	85	81	91	82%	100

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		236381-35	236381-36
Your Reference	UNITS	BD2/20200203	TP14/0-0.2
Date Sampled		03/02/2020	03/02/2020
Type of sample		Soil	Soil
Date extracted	-	11/02/2020	11/02/2020
Date analysed	-	11/02/2020	11/02/2020
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	<3	<3
Surrogate aaa-Trifluorotoluene	%	109	87

svTRH (C10-C40) in Soil						
Our Reference		236381-1	236381-2	236381-3	236381-5	236381-7
Your Reference	UNITS	TP01/0.1-0.5	TP02/0-0.3	TP03/0-0.4	TP04/0-0.4	TP05/0-0.3
Date Sampled		04/02/2020	04/02/2020	04/02/2020	04/02/2020	04/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	11/02/2020	12/02/2020	12/02/2020	12/02/2020	12/02/2020
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	101	107	105	105	107

svTRH (C10-C40) in Soil						
Our Reference		236381-8	236381-9	236381-11	236381-12	236381-14
Your Reference	UNITS	TP06/0-0.3	TP07/0.3-0.8	TP08/0-0.5	TP08/2-2.5	TP09/1.5-2.0
Date Sampled		03/02/2020	03/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	12/02/2020	12/02/2020	12/02/2020	12/02/2020	12/02/2020
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	110	140
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	170	140
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	120	<100	240	250
TRH >C_{34} -C_{40}	mg/kg	100	110	<100	110	100
Total +ve TRH (>C10-C40)	mg/kg	100	230	<50	360	350
Surrogate o-Terphenyl	%	111	106	113	126	117

svTRH (C10-C40) in Soil						
Our Reference		236381-15	236381-19	236381-20	236381-22	236381-23
Your Reference	UNITS	TP09/3.0-3.5	TP11/1-1.5	TP11/1.8-2.0	TP12/0-0.5	TP12/2-2.5
Date Sampled		03/02/2020	03/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	12/02/2020	12/02/2020	12/02/2020	12/02/2020	12/02/2020
TRH C_{10} - C_{14}	mg/kg	120	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	1,200	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	810	100	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	420	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	420	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	1,600	140	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	430	100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	2,400	240	<50	<50	<50
Surrogate o-Terphenyl	%	#	113	115	108	99

svTRH (C10-C40) in Soil						
Our Reference		236381-27	236381-29	236381-31	236381-35	236381-36
Your Reference	UNITS	TP14/1.5-1.7	TP15/1.5-1.7	TP15/3.5-3.7	BD2/20200203	TP14/0-0.2
Date Sampled		03/02/2020	03/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	12/02/2020	12/02/2020	12/02/2020	12/02/2020	12/02/2020
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	130	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	130	<100	140	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	120	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	130	<50	260	<50	<50
Surrogate o-Terphenyl	%	102	112	102	99	99

PAHs in Soil						
Our Reference		236381-1	236381-2	236381-3	236381-5	236381-7
Your Reference	UNITS	TP01/0.1-0.5	TP02/0-0.3	TP03/0-0.4	TP04/0-0.4	TP05/0-0.3
Date Sampled		04/02/2020	04/02/2020	04/02/2020	04/02/2020	04/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	12/02/2020	12/02/2020	12/02/2020	12/02/2020	12/02/2020
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	0.2	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	0.92	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	104	111	107	94	114

PAHs in Soil						
Our Reference		236381-8	236381-9	236381-11	236381-12	236381-14
Your Reference	UNITS	TP06/0-0.3	TP07/0.3-0.8	TP08/0-0.5	TP08/2-2.5	TP09/1.5-2.0
Date Sampled		03/02/2020	03/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	12/02/2020	12/02/2020	12/02/2020	12/02/2020	12/02/2020
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.2	0.3	<0.1	0.1	2.2
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.5
Fluoranthene	mg/kg	0.2	0.9	<0.1	0.3	3.8
Pyrene	mg/kg	0.4	1	<0.1	0.3	3.2
Benzo(a)anthracene	mg/kg	0.2	0.6	<0.1	0.2	1.6
Chrysene	mg/kg	0.2	0.5	<0.1	0.2	1.3
Benzo(b,j+k)fluoranthene	mg/kg	0.5	1	<0.2	0.5	3.7
Benzo(a)pyrene	mg/kg	0.4	1.0	<0.05	0.4	2.6
Indeno(1,2,3-c,d)pyrene	mg/kg	0.2	0.4	<0.1	0.2	1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Benzo(g,h,i)perylene	mg/kg	0.4	0.4	<0.1	0.2	1.9
Total +ve PAH's	mg/kg	2.8	6.6	<0.05	2.4	22
Benzo(a)pyrene TEQ calc (zero)	mg/kg	0.5	1.3	<0.5	<0.5	3.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	0.6	1.3	<0.5	0.5	3.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.6	1.4	<0.5	0.6	3.5
Surrogate p-Terphenyl-d14	%	85	96	107	103	99

PAHs in Soil						
Our Reference		236381-15	236381-19	236381-20	236381-22	236381-23
Your Reference	UNITS	TP09/3.0-3.5	TP11/1-1.5	TP11/1.8-2.0	TP12/0-0.5	TP12/2-2.5
Date Sampled		03/02/2020	03/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	12/02/2020	12/02/2020	12/02/2020	12/02/2020	12/02/2020
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.7	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	0.6	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.4	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	0.4	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	1	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.92	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.4	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.6	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	5.3	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	1.2	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	1.2	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	1.2	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	114	97	113	109	113

PAHs in Soil						
Our Reference		236381-27	236381-29	236381-31	236381-35	236381-36
Your Reference	UNITS	TP14/1.5-1.7	TP15/1.5-1.7	TP15/3.5-3.7	BD2/20200203	TP14/0-0.2
Date Sampled		03/02/2020	03/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	12/02/2020	12/02/2020	12/02/2020	12/02/2020	12/02/2020
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	1.3	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.4	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	2.9	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	2.9	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	1.7	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	1.4	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	3.4	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	2.5	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	1.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	18	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	3.0	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	3.1	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	3.1	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	91	108	107	113	109

Organochlorine Pesticides in soil						
Our Reference		236381-1	236381-3	236381-9	236381-11	236381-14
Your Reference	UNITS	TP01/0.1-0.5	TP03/0-0.4	TP07/0.3-0.8	TP08/0-0.5	TP09/1.5-2.0
Date Sampled		04/02/2020	04/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	12/02/2020	12/02/2020	12/02/2020	12/02/2020	12/02/2020
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	90	92	93	87	96

Organochlorine Pesticides in soil				
Our Reference		236381-22	236381-29	236381-36
Your Reference	UNITS	TP12/0-0.5	TP15/1.5-1.7	TP14/0-0.2
Date Sampled		03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil
Date extracted	-	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	12/02/2020	12/02/2020	12/02/2020
alpha-BHC	mg/kg	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	90	89	88

Organophosphorus Pesticides in Soil						
Our Reference		236381-1	236381-3	236381-9	236381-11	236381-14
Your Reference	UNITS	TP01/0.1-0.5	TP03/0-0.4	TP07/0.3-0.8	TP08/0-0.5	TP09/1.5-2.0
Date Sampled		04/02/2020	04/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	12/02/2020	12/02/2020	12/02/2020	12/02/2020	12/02/2020
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	90	92	93	87	96

Organophosphorus Pesticides in Soil				
Our Reference		236381-22	236381-29	236381-36
Your Reference	UNITS	TP12/0-0.5	TP15/1.5-1.7	TP14/0-0.2
Date Sampled		03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil
Date extracted	-	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	12/02/2020	12/02/2020	12/02/2020
Dichlorvos	mg/kg	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	90	89	88

PCBs in Soil						
Our Reference		236381-1	236381-3	236381-9	236381-11	236381-14
Your Reference	UNITS	TP01/0.1-0.5	TP03/0-0.4	TP07/0.3-0.8	TP08/0-0.5	TP09/1.5-2.0
Date Sampled		04/02/2020	04/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	12/02/2020	12/02/2020	12/02/2020	12/02/2020	12/02/2020
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	90	92	93	87	96

PCBs in Soil				
Our Reference		236381-22	236381-29	236381-36
Your Reference	UNITS	TP12/0-0.5	TP15/1.5-1.7	TP14/0-0.2
Date Sampled		03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil
Date extracted	-	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	12/02/2020	12/02/2020	12/02/2020
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	90	89	88

Acid Extractable metals in soil						
Our Reference		236381-1	236381-2	236381-3	236381-5	236381-7
Your Reference	UNITS	TP01/0.1-0.5	TP02/0-0.3	TP03/0-0.4	TP04/0-0.4	TP05/0-0.3
Date Sampled		04/02/2020	04/02/2020	04/02/2020	04/02/2020	04/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Arsenic	mg/kg	6	5	7	6	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	14	14	15	16
Copper	mg/kg	29	36	27	23	22
Lead	mg/kg	16	26	490	72	27
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	14	16	14	12	11
Zinc	mg/kg	55	130	93	150	120

Acid Extractable metals in soil						
Our Reference		236381-8	236381-9	236381-11	236381-12	236381-14
Your Reference	UNITS	TP06/0-0.3	TP07/0.3-0.8	TP08/0-0.5	TP08/2-2.5	TP09/1.5-2.0
Date Sampled		03/02/2020	03/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Arsenic	mg/kg	6	7	6	15	11
Cadmium	mg/kg	<0.4	1	<0.4	<0.4	<0.4
Chromium	mg/kg	21	15	11	33	17
Copper	mg/kg	37	69	25	140	35
Lead	mg/kg	25	90	26	220	28
Mercury	mg/kg	<0.1	0.2	<0.1	0.9	<0.1
Nickel	mg/kg	19	14	15	10	11
Zinc	mg/kg	200	370	78	260	36

Acid Extractable metals in soil						
Our Reference		236381-15	236381-19	236381-20	236381-22	236381-23
Your Reference	UNITS	TP09/3.0-3.5	TP11/1-1.5	TP11/1.8-2.0	TP12/0-0.5	TP12/2-2.5
Date Sampled		03/02/2020	03/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Arsenic	mg/kg	9	9	6	5	5
Cadmium	mg/kg	1	0.5	<0.4	<0.4	<0.4
Chromium	mg/kg	26	21	18	10	17
Copper	mg/kg	55	18	20	5	19
Lead	mg/kg	58	25	24	13	28
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	14	5	14	2	14
Zinc	mg/kg	250	32	44	22	44

Acid Extractable metals in soil						
Our Reference		236381-27	236381-29	236381-31	236381-35	236381-36
Your Reference	UNITS	TP14/1.5-1.7	TP15/1.5-1.7	TP15/3.5-3.7	BD2/20200203	TP14/0-0.2
Date Sampled		03/02/2020	03/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Arsenic	mg/kg	5	10	6	6	6
Cadmium	mg/kg	<0.4	0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	10	24	16	12	12
Copper	mg/kg	36	40	22	7	31
Lead	mg/kg	130	47	29	12	24
Mercury	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	7	11	15	6	16
Zinc	mg/kg	260	160	74	24	89

Misc Soil - Inorg						
Our Reference		236381-1	236381-3	236381-9	236381-11	236381-14
Your Reference	UNITS	TP01/0.1-0.5	TP03/0-0.4	TP07/0.3-0.8	TP08/0-0.5	TP09/1.5-2.0
Date Sampled		04/02/2020	04/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg				
Our Reference		236381-22	236381-29	236381-36
Your Reference	UNITS	TP12/0-0.5	TP15/1.5-1.7	TP14/0-0.2
Date Sampled		03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil
Date prepared	-	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	11/02/2020	11/02/2020	11/02/2020
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5

Moisture						
Our Reference		236381-1	236381-2	236381-3	236381-5	236381-7
Your Reference	UNITS	TP01/0.1-0.5	TP02/0-0.3	TP03/0-0.4	TP04/0-0.4	TP05/0-0.3
Date Sampled		04/02/2020	04/02/2020	04/02/2020	04/02/2020	04/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	12/02/2020	12/02/2020	12/02/2020	12/02/2020	12/02/2020
Moisture	%	9.1	25	15	18	19

Moisture						
Our Reference		236381-8	236381-9	236381-11	236381-12	236381-14
Your Reference	UNITS	TP06/0-0.3	TP07/0.3-0.8	TP08/0-0.5	TP08/2-2.5	TP09/1.5-2.0
Date Sampled		03/02/2020	03/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	12/02/2020	12/02/2020	12/02/2020	12/02/2020	12/02/2020
Moisture	%	11	12	14	28	17

Moisture						
Our Reference		236381-15	236381-19	236381-20	236381-22	236381-23
Your Reference	UNITS	TP09/3.0-3.5	TP11/1-1.5	TP11/1.8-2.0	TP12/0-0.5	TP12/2-2.5
Date Sampled		03/02/2020	03/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	12/02/2020	12/02/2020	12/02/2020	12/02/2020	12/02/2020
Moisture	%	25	17	19	8.4	18

Moisture						
Our Reference		236381-27	236381-29	236381-31	236381-35	236381-36
Your Reference	UNITS	TP14/1.5-1.7	TP15/1.5-1.7	TP15/3.5-3.7	BD2/20200203	TP14/0-0.2
Date Sampled		03/02/2020	03/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	12/02/2020	12/02/2020	12/02/2020	12/02/2020	12/02/2020
Moisture	%	9.9	14	16	9.6	8.9

Asbestos ID - soils NEPM						
Our Reference		236381-1	236381-2	236381-3	236381-5	236381-7
Your Reference	UNITS	TP01/0.1-0.5	TP02/0-0.3	TP03/0-0.4	TP04/0-0.4	TP05/0-0.3
Date Sampled		04/02/2020	04/02/2020	04/02/2020	04/02/2020	04/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	13/02/2020	13/02/2020	13/02/2020	13/02/2020	13/02/2020
Sample mass tested	g	1,649.3	804.39	1,097.87	980.32	883.93
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM						
Our Reference		236381-8	236381-9	236381-11	236381-12	236381-14
Your Reference	UNITS	TP06/0-0.3	TP07/0.3-0.8	TP08/0-0.5	TP08/2-2.5	TP09/1.5-2.0
Date Sampled		03/02/2020	03/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	13/02/2020	13/02/2020	13/02/2020	13/02/2020	13/02/2020
Sample mass tested	g	701.11	802.14	668.75	579.93	694.48
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM						
Our Reference		236381-15	236381-17	236381-19	236381-21	236381-22
Your Reference	UNITS	TP09/3.0-3.5	TP10/0-0.5	TP11/1-1.5	TP11/1.7-2.1	TP12/0-0.5
Date Sampled		03/02/2020	03/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	13/02/2020	13/02/2020	13/02/2020	13/02/2020	13/02/2020
Sample mass tested	g	664.82	907.25	633.4	632.15	905.79
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Red clayey soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	Chrysotile asbestos detected Amosite asbestos detected Crocidolite asbestos detected Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	0.1215	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	See Above	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	0.1103	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM						
Our Reference		236381-23	236381-24	236381-25	236381-26	236381-30
Your Reference	UNITS	TP12/2-2.5	TP13/-0.5	TP14/0-0.5	TP14/0.6-1.6	TP15/1.5-2.0
Date Sampled		03/02/2020	03/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	13/02/2020	13/02/2020	13/02/2020	13/02/2020	13/02/2020
Sample mass tested	g	807.62	760.24	972.66	981.94	805.2
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM		
Our Reference		236381-32
Your Reference	UNITS	TP15/2.5-3.0
Date Sampled		03/02/2020
Type of sample		Soil
Date analysed	-	13/02/2020
Sample mass tested	g	780.18
Sample Description	-	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected
Total Asbestos#1	g/kg	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected
ACM >7mm Estimation*	g	–
FA and AF Estimation*	g	–
FA and AF Estimation*#2	%(w/w)	<0.001

CEC				
Our Reference		236381-2	236381-5	236381-11
Your Reference	UNITS	TP02/0-0.3	TP04/0-0.4	TP08/0-0.5
Date Sampled		04/02/2020	04/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil
Date prepared	-	14/02/2020	14/02/2020	14/02/2020
Date analysed	-	14/02/2020	14/02/2020	14/02/2020
Exchangeable Ca	meq/100g	16	15	9.7
Exchangeable K	meq/100g	0.6	0.6	0.3
Exchangeable Mg	meq/100g	12	6.4	4.8
Exchangeable Na	meq/100g	0.94	0.91	0.84
Cation Exchange Capacity	meq/100g	29	23	16

Misc Inorg - Soil				
Our Reference	UNITS	236381-2	236381-5	236381-11
Your Reference		TP02/0-0.3	TP04/0-0.4	TP08/0-0.5
Date Sampled		04/02/2020	04/02/2020	03/02/2020
Type of sample		Soil	Soil	Soil
Date prepared	-	11/02/2020	11/02/2020	11/02/2020
Date analysed	-	11/02/2020	11/02/2020	11/02/2020
pH 1:5 soil:water	pH Units	7.7	7.9	8.3

Asbestos ID - materials						
Our Reference		236381-4	236381-6	236381-10	236381-13	236381-16
Your Reference	UNITS	TP14/A1	TP04/A1	TP07/A1	TP08/A1	TP09/A2
Date Sampled		04/02/2020	04/02/2020	03/02/2020	03/02/2020	03/02/2020
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	12/02/2020	12/02/2020	12/02/2020	12/02/2020	12/02/2020
Mass / Dimension of Sample	-	100x60x10mm	45x19x5mm	65x42x5mm	78x54x5mm	40x30x4mm
Sample Description	-	Beige fibre cement material	Beige fibre cement material	Beige fibre cement material	Beige fibre cement material	Beige fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected Amosite asbestos detected	Chrysotile asbestos detected Amosite asbestos detected	Chrysotile asbestos detected	Chrysotile asbestos detected Amosite asbestos detected	Chrysotile asbestos detected Amosite asbestos detected
Trace Analysis	-	[NT]	[NT]	[NT]	[NT]	[NT]

Asbestos ID - materials			
Our Reference		236381-18	236381-28
Your Reference	UNITS	TP10/A1	TP14/A2
Date Sampled		03/02/2020	03/02/2020
Type of sample		Material	Material
Date analysed	-	12/02/2020	12/02/2020
Mass / Dimension of Sample	-	87x37x4mm	78x33x7mm
Sample Description	-	Beige fibre cement material	Beige layered cement material
Asbestos ID in materials	-	Chrysotile asbestos detected	No asbestos detected
Trace Analysis	-	[NT]	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.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. **NOTE** #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF) **NOTE** #2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
AT-008	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
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-009	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-AES analytical finish.
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.

Method ID	Methodology Summary
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-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-012/017	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS.
Org-012/017	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS and/or GC-MS/MS. 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-012/017	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/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: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	236381-3
Date extracted	-			11/02/2020	1	11/02/2020	11/02/2020		11/02/2020	11/02/2020
Date analysed	-			11/02/2020	1	11/02/2020	11/02/2020		11/02/2020	11/02/2020
TRH C_6 - C_9	mg/kg	25	Org-016	<25	1	<25	<25	0	82	92
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	1	<25	<25	0	82	92
Benzene	mg/kg	0.2	Org-016	<0.2	1	<0.2	<0.2	0	74	93
Toluene	mg/kg	0.5	Org-016	<0.5	1	<0.5	<0.5	0	90	86
Ethylbenzene	mg/kg	1	Org-016	<1	1	<1	<1	0	82	94
m+p-xylene	mg/kg	2	Org-016	<2	1	<2	<2	0	82	94
o-Xylene	mg/kg	1	Org-016	<1	1	<1	<1	0	84	91
naphthalene	mg/kg	1	Org-014	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	97	1	88	107	19	93	93

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	22	11/02/2020	11/02/2020		[NT]	[NT]
Date analysed	-			[NT]	22	11/02/2020	11/02/2020		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	22	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	22	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-016	[NT]	22	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-016	[NT]	22	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-016	[NT]	22	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-016	[NT]	22	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-016	[NT]	22	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-014	[NT]	22	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	22	86	89	3	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	236381-3
Date extracted	-			11/02/2020	1	11/02/2020	11/02/2020		11/02/2020	11/02/2020
Date analysed	-			11/02/2020	1	11/02/2020	11/02/2020		11/02/2020	12/02/2020
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	1	<50	<50	0	90	101
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	1	<100	<100	0	93	109
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	1	<100	<100	0	123	116
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	1	<50	<50	0	90	101
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	1	<100	<100	0	93	109
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	1	<100	<100	0	123	116
Surrogate o-Terphenyl	%		Org-003	106	1	101	90	12	119	105

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	22	11/02/2020	11/02/2020		[NT]	[NT]
Date analysed	-			[NT]	22	12/02/2020	12/02/2020		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	22	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	22	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	22	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	22	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	22	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	22	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-003	[NT]	22	108	97	11	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	236381-3
Date extracted	-			11/02/2020	1	11/02/2020	11/02/2020		11/02/2020	11/02/2020
Date analysed	-			12/02/2020	1	12/02/2020	12/02/2020		12/02/2020	12/02/2020
Naphthalene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	86	91
Acenaphthylene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	94	100
Phenanthrene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	94	102
Anthracene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	88	100
Pyrene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	84	98
Benzo(a)anthracene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	64	72
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012/017	<0.05	1	<0.05	<0.05	0	86	88
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	97	1	104	105	1	96	107

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	22	11/02/2020	11/02/2020		[NT]	[NT]
Date analysed	-			[NT]	22	12/02/2020	12/02/2020		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012/017	[NT]	22	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012/017	[NT]	22	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	[NT]	22	109	105	4	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	236381-3
Date extracted	-			11/02/2020	1	11/02/2020	11/02/2020		11/02/2020	11/02/2020
Date analysed	-			12/02/2020	1	12/02/2020	12/02/2020		12/02/2020	12/02/2020
alpha-BHC	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	114	123
HCB	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	114	126
gamma-BHC	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	106	116
delta-BHC	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	114	126
Heptachlor Epoxide	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	106	122
gamma-Chlordane	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	108	122
Dieldrin	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	116	132
Endrin	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	102	122
Endosulfan II	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	104	118
Endrin Aldehyde	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	112	122
Methoxychlor	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	85	1	90	90	0	86	92

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	22	11/02/2020	11/02/2020		[NT]	[NT]
Date analysed	-			[NT]	22	12/02/2020	12/02/2020		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	22	90	87	3	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	236381-3
Date extracted	-			11/02/2020	1	11/02/2020	11/02/2020		11/02/2020	11/02/2020
Date analysed	-			12/02/2020	1	12/02/2020	12/02/2020		12/02/2020	12/02/2020
Dichlorvos	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	108	116
Dimethoate	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	104	120
Fenitrothion	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	82	108
Malathion	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	100	118
Chlorpyriphos	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	106	123
Parathion	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	92	116
Bromophos-ethyl	mg/kg	0.1	AT-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	96	120
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	85	1	90	90	0	86	92

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	22	11/02/2020	11/02/2020		[NT]	[NT]
Date analysed	-			[NT]	22	12/02/2020	12/02/2020		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	AT-008	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-012/017	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	22	90	87	3	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	236381-3
Date extracted	-			11/02/2020	1	11/02/2020	11/02/2020		11/02/2020	11/02/2020
Date analysed	-			12/02/2020	1	12/02/2020	12/02/2020		12/02/2020	12/02/2020
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	69	79
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	85	1	90	90	0	86	92

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	22	11/02/2020	11/02/2020		[NT]	[NT]
Date analysed	-			[NT]	22	12/02/2020	12/02/2020		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	[NT]	22	90	87	3	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	236381-3
Date prepared	-			11/02/2020	1	11/02/2020	11/02/2020		11/02/2020	11/02/2020
Date analysed	-			11/02/2020	1	11/02/2020	11/02/2020		11/02/2020	11/02/2020
Arsenic	mg/kg	4	Metals-020	<4	1	6	5	18	94	76
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	90	78
Chromium	mg/kg	1	Metals-020	<1	1	7	7	0	96	77
Copper	mg/kg	1	Metals-020	<1	1	29	28	4	95	83
Lead	mg/kg	1	Metals-020	<1	1	16	14	13	106	#
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	94	92
Nickel	mg/kg	1	Metals-020	<1	1	14	13	7	94	73
Zinc	mg/kg	1	Metals-020	<1	1	55	50	10	101	51

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	22	11/02/2020	11/02/2020		[NT]	[NT]
Date analysed	-			[NT]	22	11/02/2020	11/02/2020		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	22	5	<4	22	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	22	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	22	10	7	35	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	22	5	5	0	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	22	13	13	0	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	22	2	2	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	22	22	24	9	[NT]	[NT]

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	236381-3
Date prepared	-			11/02/2020	1	11/02/2020	11/02/2020		11/02/2020	11/02/2020
Date analysed	-			11/02/2020	1	11/02/2020	11/02/2020		11/02/2020	11/02/2020
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	1	<5	<5	0	102	103

QUALITY CONTROL: CEC						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			14/02/2020	2	14/02/2020	14/02/2020		14/02/2020	[NT]
Date analysed	-			14/02/2020	2	14/02/2020	14/02/2020		14/02/2020	[NT]
Exchangeable Ca	meq/100g	0.1	Metals-009	<0.1	2	16	15	6	102	[NT]
Exchangeable K	meq/100g	0.1	Metals-009	<0.1	2	0.6	0.5	18	106	[NT]
Exchangeable Mg	meq/100g	0.1	Metals-009	<0.1	2	12	12	0	103	[NT]
Exchangeable Na	meq/100g	0.1	Metals-009	<0.1	2	0.94	0.99	5	111	[NT]

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			11/02/2020	11	11/02/2020	11/02/2020		11/02/2020	[NT]
Date analysed	-			11/02/2020	11	11/02/2020	11/02/2020		11/02/2020	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	11	8.3	8.2	1	102	[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.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

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 (not SPOCAS); 60-140% for organics/SPOCAS (+/-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.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

TRH Soil C10-C40 NEPM - # Percent recovery for the surrogate is not possible to report as the high concentration of analytes in sample/s 235381-15 has caused interference.

Acid Extractable Metals in Soil
- Spike recovery for Zn in sample 236381-3 at 51% which is outside lab acceptance criteria (70-130%), however, the LCS recovery is acceptable at 101%. Sample heterogeneity suspected.
-# Percent recovery is not possible to report due to the high concentration of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	84822.03	**Suburb:**	Eastern Creek	**To:**	EnviroLab
Project Name:	Green Waratah	**Order Number**			12 Ashley Street, Chatswood 2067
Project Manager:	Paul Gorman	**Sampler:**	SDH	**Attn:**	Aileen Hie
Emails:	joel.james-hall@douglaspartners.com.au; paul.gorman@douglaspartners.com			**Phone:**	(02) 9910 6200
Date Required:	Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☑			**Email:**	Ahie@envirolab.com.au
Prior Storage:	☑ Esky ☑ Fridge ☐ Shelved	Do samples contain 'potential' HBM?	Yes ☑	No ☐	(If YES, then handle, transport and store in accordance with FPM HAZID)

Sample ID	Lab ID	Date Sampled	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: Combo 8	Combo 3	FA & AF	pH, CEC	BTEX	TRH	Asbestos ID		Notes/preservation
TP01/0.1-0.5	1	04/02/20	S	G/P	x		x						
TP02/0-0.3	2	04/02/20	S	G/P		x	x	x					
TP03/0-0.4	3	04/02/20	S	G/P	x		x						
TP14/A1	4	04/02/20	Material	P							x		
TP04/0-0.4	5	04/02/20	S	G/P		x	x	x					
TP04/A1	6	04/02/20	Material	P							x		
TP05/0-0.3	7	04/02/20	S	G/P		x	x						
TP06/0-0.3	8	03/02/20	S	G/P		x	x						
TP07/0.3-0.8	9	03/02/20	S	G/P	x		x						
TP07/A1	10	03/02/20	Material	P							x		
TP08/0-0.5	11	03/02/20	S	G/P	x		x	x					
TP08/2-2.5	12	03/02/20	S	G/P		x	x						
TP08/A1	13	03/02/20	Material	P							x		
TP09/1.5-2.0	14	03/02/20	S	G/P	x		x						
TP09/3.0-3.5	15	03/02/20	S	G/P		x	x						
PQL (S) mg/kg												**ANZECC PQLs req'd for all water analytes** ☐	

ENVIROLAB GROUP
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 236381
Date Received: 10/02/20
Time Received: 1408
Received by: SB
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here: 8HM plus Manganese

Lab Report/Reference No: 236381

Total number of samples in container: **Relinquished by:** SDH **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd **Address:** **Phone:** **Fax:**

Signed: **Received by:** S. Bolton **Date & Time:** 10/02/20 1408

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	84822.03	**Suburb:**	Eastern Creek	**To:**	EnviroLab
Project Name:	Green Waratah	**Order Number**			12 Ashley Street, Chatswood 2067
Project Manager:	Paul Gorman	**Sampler:**		**Attn:**	Aileen Hie
Emails:	joel.james-hall@douglaspartners.com.au; paul.gorman@douglaspartners.com			**Phone:**	(02) 9910 6200
Date Required:	Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☐			**Email:**	Ahie@envirolab.com.au
Prior Storage:	☐ Esky ☐ Fridge ☐ Shelved	Do samples contain 'potential' HBM?	Yes ☐ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)		

Sample ID	Lab ID	Date Sampled	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: Combo 8	Combo 3	FA & AF	pH, CEC	BTEX	TRH	Asbestos ID			Notes/preservation
TP09/A2	16	03/02/20	Material	P							x			
TP10/0-0.5	17	03/02/20	S	P			x							
TP10/A1	18	03/02/20	Material	P							x			
TP11/1-1.5	19	03/02/20	S	G/P		x	x							
TP11/1.8-2.0	20	03/02/20	S	G		x								
TP11/1.7-2.1	21	03/02/20	S	P			x							
TP12/0-0.5	22	03/02/20	S	G/P	x		x							
TP12/2-2.5	23	03/02/20	S	G/P		x	x							
TP13/-0.5	24	03/02/20	S	P			x							
TP14/0-0.5	25	03/02/20	S	G/P			x							
TP14/0.6-1.6	26	03/02/20	S	P			x							
TP14/1.5-1.7	27	03/02/20	S	G		x								
TP14/A2	28	03/02/20	Material	P							x			
TP15/1.5-1.7	29	03/02/20	S	G	x									
TP15/1.5-2.0	30	03/02/20	S	P			x							
PQL (S) mg/kg														**ANZECC PQLs req'd for all water analytes** ☐

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Lab Report/Reference No: 236381

Total number of samples in container: | **Relinquished by:** | **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd | **Address:** | **Phone:** | **Fax:**

Signed: | **Received by:** S. Bolton | **Date & Time:** 10/02/20 1408

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	84822.03	**Suburb:**	Eastern Creek	**To:**	EnviroLab
Project Name:	Green Waratah	**Order Number**			12 Ashley Street, Chatswood 2067
Project Manager:	Paul Gorman	**Sampler:**		**Attn:**	Aileen Hie
Emails:	joel.james-hall@douglaspartners.com.au; paul.gorman@douglaspartners.com			**Phone:**	(02) 9910 6200
Date Required:	Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☐			**Email:**	Ahie@envirolab.com.au
Prior Storage:	☐ Esky ☐ Fridge ☐ Shelved	Do samples contain 'potential' HBM?	Yes ☐	No ☐	(If YES, then handle, transport and store in accordance with FPM HAZID)

Sample ID	Lab ID	Sampling Date	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: Combo 8	Combo 3	FA & AF	pH, CEC	BTEX	TRH	Asbestos ID			Notes/preservation
TP15/3.5-3.7	31	03/02/20	S	G		x								
TP15/2.5-3.0	32	03/02/20	S	P			x							
Trip Spike	33	03/02/20	S	G					x					
Trip Blank	34	03/02/20	S	G					x	x				
BD2/20200203	35	03/02/20	S	G		x								Intra-lab replicate
BD1/20200204	—	04/02/20	S	G		x								Inter-lab replicate
TP14/0-0.2	36	3/2/20	S	G	x	extra required.								
PQL (S) mg/kg														**ANZECC PQLs req'd for all water analytes** ☐

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Lab Report/Reference No: 236381

Total number of samples in container:	**Relinquished by:**	**Transported to laboratory by:**	
Send Results to: Douglas Partners Pty Ltd	**Address:**	**Phone:**	**Fax:**
Signed:	**Received by:** S. Bolton	**Date & Time:** 10/02/20	1405

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
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CERTIFICATE OF ANALYSIS 237639

Client Details

Client	Douglas Partners Pty Ltd
Attention	Paul Gorman
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**84822.03, Eastern Creek EIS**
Number of Samples	7xCanisters, 7xCT
Date samples received	27/02/2020
Date completed instructions received	27/02/2020

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	05/03/2020
Date of Issue	06/03/2020

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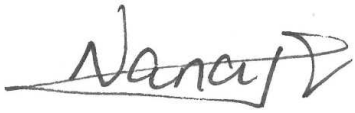
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Chris Guo, Senior Chemist, Air
Steven Luong, Organics Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

VOC in Carbon tubes		
Our Reference		237639-11
Your Reference	UNITS	IPA QAQC - CT
Date Sampled		26/02/2020
Type of sample		Air - CT
Air Kit Security No.		8076720451
Date extracted	-	04/03/2020
Date analysed	-	06/03/2020
Isopropyl Alcohol*	µg/tube	22,000
Surrogate Toluene-d8	%	122
Surrogate 4-Bromofluorobenzene	%	120

VOC in Carbon tubes		
Our Reference		237639-11
Your Reference	UNITS	IPA QAQC - CT
Date Sampled		26/02/2020
Type of sample		Air - CT
Air Kit Security No.		8076720451
Date prepared	-	26/02/2020
Date analysed	-	06/03/2020
Tube Sampling rate	mL/min	113
Tube Sampling Time	mins	0.5
Volume sampled	m^3	0.00005650
Isopropyl Alcohol	$\mu g/m^3$	390,000,000

TPH Air/ Air Phase Hydrocarbon						
Our Reference		237639-1	237639-3	237639-5	237639-6	237639-8
Your Reference	UNITS	BH208 - CAN	BH2 - CAN	BH201 - CAN	BH4 - CAN	BH213 -CAN
Date Sampled		26/02/2020	26/02/2020	26/02/2020	26/02/2020	26/02/2020
Type of sample		Air - Canister	Air - Canister	Air - Canister	Air - Canister	Air - Canister
Air Kit Security No.		3291	1688	3533	3642	2554
Date prepared	-	28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Date analysed	-	28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
TPH C_5 - C_8 Aliphatic	µg/m³	<200	<200	<200	<200	1,000
TPH C_9 - C_{12} Aliphatic	µg/m³	<50	<50	<50	<50	<100
TPH C_9 - C_{10} Aromatic	µg/m³	<100	<100	<100	<100	<200
TPH C_6 - C_{10} - BTEX (F1)	µg/m³	<200	<200	<200	<200	<400
TPH >C_{10} - C_{12} - Naphthalene (F2)	µg/m³	140	<40	<40	<40	<80

TPH Air/ Air Phase Hydrocarbon			
Our Reference		237639-10	237639-12
Your Reference	UNITS	BD1 - CAN	BH204 - CAN
Date Sampled		26/02/2020	26/02/2020
Type of sample		Air - Canister	Air - Canister
Air Kit Security No.		3509	3651
Date prepared	-	28/02/2020	28/02/2020
Date analysed	-	28/02/2020	28/02/2020
TPH C_5 - C_8 Aliphatic	µg/m³	<200	250
TPH C_9 - C_{12} Aliphatic	µg/m³	<50	<50
TPH C_9 - C_{10} Aromatic	µg/m³	<100	<100
TPH C_6 - C_{10} - BTEX (F1)	µg/m³	<200	<200
TPH >C_{10} - C_{12} - Naphthalene (F2)	µg/m³	<40	<40

TO15 in Canisters/Bags						
Our Reference		237639-1	237639-3	237639-5	237639-6	237639-8
Your Reference	UNITS	BH208 - CAN	BH2 - CAN	BH201 - CAN	BH4 - CAN	BH213 -CAN
Date Sampled		26/02/2020	26/02/2020	26/02/2020	26/02/2020	26/02/2020
Type of sample		Air - Canister	Air - Canister	Air - Canister	Air - Canister	Air - Canister
Air Kit Security No.		3291	1688	3533	3642	2554
Vacuum before Shipment	Hg"	-30	-30	-30	-30	-30
Vacuum before Analysis	Hg"	-7	-8	-10	-7	-7
Date prepared	-	28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Date analysed	-	28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Propylene	ppbv	4	3	5	3	5
Dichlorodifluoromethane	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Chloromethane	ppbv	0.8	0.9	1	0.7	2
1,2-Dichlorotetrafluoroethane	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Vinyl chloride	ppbv	<0.5	<0.5	<0.5	<0.5	<1
1,3-Butadiene	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Bromomethane	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Chloroethane	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Ethanol	ppbv	30	30	20	30	40
Acrolein	ppbv	<5	<5	<5	<5	<10
Trichlorofluoromethane (Freon 11)	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Acetone	ppbv	30	40	30	30	30
Isopropyl Alcohol	ppbv	30	77	50	170	990
1,1-Dichloroethene	ppbv	<0.5	<0.5	<0.5	<0.5	<1
1,1,2-Trichlorotrifluoroethane	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Methylene chloride (Dichloromethane)	ppbv	<5	<5	<5	<5	<10
Carbon Disulfide	ppbv	<5	<5	<5	<5	20
trans-1,2-dichloroethene	ppbv	<0.5	<0.5	<0.5	<0.5	<1
MTBE	ppbv	<0.5	<0.5	<0.5	<0.5	<1
1,1- Dichloroethane	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Vinyl Acetate	ppbv	<0.5	<0.5	<0.5	<0.5	<1
MEK	ppbv	<5	<5	<5	<5	<10
Hexane	ppbv	<0.5	1	0.9	0.6	1
cis-1,2-Dichloroethene	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Ethyl Acetate	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Chloroform	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Tetrahydrofuran	ppbv	<0.5	<0.5	<0.5	<0.5	3
1,1,1-Trichloroethane	ppbv	<0.5	<0.5	<0.5	<0.5	<1
1,2-Dichloroethane	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Benzene	ppbv	2	3	4	3	3
Carbon tetrachloride	ppbv	<0.5	<0.5	<0.5	<0.5	<1

TO15 in Canisters/Bags						
Our Reference		237639-1	237639-3	237639-5	237639-6	237639-8
Your Reference	UNITS	BH208 - CAN	BH2 - CAN	BH201 - CAN	BH4 - CAN	BH213 -CAN
Date Sampled		26/02/2020	26/02/2020	26/02/2020	26/02/2020	26/02/2020
Type of sample		Air - Canister	Air - Canister	Air - Canister	Air - Canister	Air - Canister
Air Kit Security No.		3291	1688	3533	3642	2554
Cyclohexane	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Heptane	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Trichloroethene	ppbv	<0.5	0.6	<0.5	<0.5	2
1,2-Dichloropropane	ppbv	<0.5	<0.5	<0.5	<0.5	<1
1,4-Dioxane	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Bromodichloromethane	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Methyl Methacrylate	ppbv	<0.5	<0.5	<0.5	<0.5	<1
MIBK	ppbv	<5	<5	<5	<5	<10
cis-1,3-Dichloropropene	ppbv	<0.5	<0.5	<0.5	<0.5	<1
trans-1,3-Dichloropropene	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Toluene	ppbv	3	7.6	4	10	11
1,1,2-Trichloroethane	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Methyl Butyl Ketone	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Dibromochloromethane	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Tetrachloroethene	ppbv	1	2	1	3	3
1,2-Dibromoethane	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Chlorobenzene	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Ethylbenzene	ppbv	0.7	1	0.6	1	1
m-& p-Xylene	ppbv	4	3	1	4	4
Styrene	ppbv	0.9	<0.5	0.6	<0.5	<1
o-Xylene	ppbv	2	1	0.6	1	1
Bromoform	ppbv	<0.5	<0.5	<0.5	<0.5	<1
1,1,2,2-Tetrachloroethane	ppbv	<0.5	<0.5	<0.5	<0.5	<1
4-ethyl toluene	ppbv	1	<1	<0.5	<0.5	<1
1,3,5-Trimethylbenzene	ppbv	3	0.5	<0.5	<0.5	<1
1,2,4-Trimethylbenzene	ppbv	6.6	1	0.7	1	1
1,3-Dichlorobenzene	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Benzyl chloride	ppbv	<0.5	<0.5	<0.5	<0.5	<1
1,4-Dichlorobenzene	ppbv	<0.5	<0.5	<0.5	<0.5	<1
1,2-Dichlorobenzene	ppbv	<0.5	<0.5	<0.5	<0.5	<1
1,2,4-Trichlorobenzene	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Naphthalene	ppbv	0.5	<0.5	<0.5	<0.5	<1
Hexachloro- 1,3-butadiene	ppbv	<0.5	<0.5	<0.5	<0.5	<1
Surrogate-Bromochloromethane	% rec	109	106	107	107	105
Surrogate -1,4-Difluorobenzene	% rec	100	101	101	101	100
Surrogate-Chlorobenzene-D5	% rec	98	98	97	98	98

TO15 in Canisters/Bags			
Our Reference		237639-10	237639-12
Your Reference	UNITS	BD1 - CAN	BH204 - CAN
Date Sampled		26/02/2020	26/02/2020
Type of sample		Air - Canister	Air - Canister
Air Kit Security No.		3509	3651
Vacuum before Shipment	Hg"	-30	-30
Vacuum before Analysis	Hg"	-3	-8
Date prepared	-	28/02/2020	28/02/2020
Date analysed	-	28/02/2020	28/02/2020
Propylene	ppbv	5	4
Dichlorodifluoromethane	ppbv	<0.5	<0.5
Chloromethane	ppbv	1	1
1,2-Dichlorotetrafluoroethane	ppbv	<0.5	<0.5
Vinyl chloride	ppbv	<0.5	<0.5
1,3-Butadiene	ppbv	<0.5	<0.5
Bromomethane	ppbv	<0.5	<0.5
Chloroethane	ppbv	<0.5	<0.5
Ethanol	ppbv	20	30
Acrolein	ppbv	<5	<5
Trichlorofluoromethane (Freon 11)	ppbv	<0.5	<0.5
Acetone	ppbv	30	40
Isopropyl Alcohol	ppbv	40	220
1,1-Dichloroethene	ppbv	<0.5	<0.5
1,1,2-Trichlorotrifluoroethane	ppbv	<0.5	<0.5
Methylene chloride (Dichloromethane)	ppbv	<5	<5
Carbon Disulfide	ppbv	<5	<5
trans-1,2-dichloroethene	ppbv	<0.5	<0.5
MTBE	ppbv	<0.5	<0.5
1,1- Dichloroethane	ppbv	<0.5	<0.5
Vinyl Acetate	ppbv	<0.5	<0.5
MEK	ppbv	<5	<5
Hexane	ppbv	4	2
cis-1,2-Dichloroethene	ppbv	<0.5	<0.5
Ethyl Acetate	ppbv	<0.5	<0.5
Chloroform	ppbv	<0.5	<0.5
Tetrahydrofuran	ppbv	<0.5	0.7
1,1,1-Trichloroethane	ppbv	<0.5	<0.5
1,2-Dichloroethane	ppbv	<0.5	<0.5
Benzene	ppbv	4	4
Carbon tetrachloride	ppbv	<0.5	<0.5

TO15 in Canisters/Bags			
Our Reference		237639-10	237639-12
Your Reference	UNITS	BD1 - CAN	BH204 - CAN
Date Sampled		26/02/2020	26/02/2020
Type of sample		Air - Canister	Air - Canister
Air Kit Security No.		3509	3651
Cyclohexane	ppbv	<0.5	<0.5
Heptane	ppbv	<0.5	<0.5
Trichloroethene	ppbv	1	0.8
1,2-Dichloropropane	ppbv	<0.5	<0.5
1,4-Dioxane	ppbv	<0.5	<0.5
Bromodichloromethane	ppbv	<0.5	<0.5
Methyl Methacrylate	ppbv	<0.5	<0.5
MIBK	ppbv	<5	<5
cis-1,3-Dichloropropene	ppbv	<0.5	<0.5
trans-1,3-Dichloropropene	ppbv	<0.5	<0.5
Toluene	ppbv	4	7.2
1,1,2-Trichloroethane	ppbv	<0.5	<0.5
Methyl Butyl Ketone	ppbv	<0.5	<0.5
Dibromochloromethane	ppbv	<0.5	<0.5
Tetrachloroethene	ppbv	2	2
1,2-Dibromoethane	ppbv	<0.5	<0.5
Chlorobenzene	ppbv	<0.5	<0.5
Ethylbenzene	ppbv	0.7	1
m-& p-Xylene	ppbv	2	3
Styrene	ppbv	0.9	2
o-Xylene	ppbv	0.8	1
Bromoform	ppbv	<0.5	<0.5
1,1,2,2-Tetrachloroethane	ppbv	<0.5	<0.5
4-ethyl toluene	ppbv	<0.5	<1
1,3,5-Trimethylbenzene	ppbv	<0.5	0.6
1,2,4-Trimethylbenzene	ppbv	0.9	1
1,3-Dichlorobenzene	ppbv	<0.5	<0.5
Benzyl chloride	ppbv	<0.5	<0.5
1,4-Dichlorobenzene	ppbv	<0.5	<0.5
1,2-Dichlorobenzene	ppbv	<0.5	<0.5
1,2,4-Trichlorobenzene	ppbv	<0.5	<0.5
Naphthalene	ppbv	<0.5	<0.5
Hexachloro- 1,3-butadiene	ppbv	<0.5	<0.5
Surrogate-Bromochloromethane	% rec	107	105
Surrogate -1,4-Difluorobenzene	% rec	99	101
Surrogate-Chlorobenzene-D5	% rec	96	98

TO15 in Canisters ug/m3						
Our Reference		237639-1	237639-3	237639-5	237639-6	237639-8
Your Reference	UNITS	BH208 - CAN	BH2 - CAN	BH201 - CAN	BH4 - CAN	BH213 -CAN
Date Sampled		26/02/2020	26/02/2020	26/02/2020	26/02/2020	26/02/2020
Type of sample		Air - Canister	Air - Canister	Air - Canister	Air - Canister	Air - Canister
Air Kit Security No.		3291	1688	3533	3642	2554
Vacuum before Shipment	Hg"	-30	-30	-30	-30	-30
Vacuum before Analysis	Hg"	-7	-8	-10	-7	-7
Date prepared	-	28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Date analysed	-	28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Propylene	µg/m³	7	6	8	5	8
Dichlorodifluoromethane	µg/m³	<2.5	<2.5	<2.5	<2.5	<5
Chloromethane	µg/m³	2	2	2	1	4
1,2-Dichlorotetrafluoroethane	µg/m³	<2.5	<2.5	<2.5	<2.5	<5
Vinyl chloride	µg/m³	<1.3	<1.3	<1.3	<1.3	<3
1,3-Butadiene	µg/m³	<1.1	<1.1	<1.1	<1.1	<2
Bromomethane	µg/m³	<1.9	<1.9	<1.9	<1.9	<4
Chloroethane	µg/m³	<1.3	<1.3	<1.3	<1.3	<3
Ethanol	µg/m³	60	50	40	60	70
Acrolein	µg/m³	<11	<11	<11	<11	<20
Trichlorofluoromethane (Freon 11)	µg/m³	<2.8	<2.8	<2.8	<2.8	<6
Acetone	µg/m³	70	100	70	80	60
Isopropyl Alcohol	µg/m³	80	190	100	430	2,400
1,1-Dichloroethene	µg/m³	<2	<2	<2	<2	<4
1,1,2-Trichlorotrifluoroethane	µg/m³	<3.8	<3.8	<3.8	<3.8	<8
Methylene chloride (Dichloromethane)	µg/m³	<17	<17	<17	<17	<30
Carbon Disulfide	µg/m³	<16	<16	<16	<16	50
trans-1,2-dichloroethene	µg/m³	<2	<2	<2	<2	<4
MTBE	µg/m³	<1.8	<1.8	<1.8	<1.8	<4
1,1- Dichloroethane	µg/m³	<2	<2	<2	<2	<4
Vinyl Acetate	µg/m³	<1.8	<1.8	<1.8	<1.8	<4
MEK	µg/m³	<15	<15	<15	<15	<30
Hexane	µg/m³	<1.8	4	3	2	4
cis-1,2-Dichloroethene	µg/m³	<2	<2	<2	<2	<4
Ethyl Acetate	µg/m³	<1.8	<1.8	<1.8	<1.8	<4
Chloroform	µg/m³	<2.4	<2.4	<2.4	<2.4	<5
Tetrahydrofuran	µg/m³	<1.5	<1.5	<1.5	<1.5	8
1,1,1-Trichloroethane	µg/m³	<2.7	<2.7	<2.7	<2.7	<5
1,2-Dichloroethane	µg/m³	<2	<2	<2	<2	<4
Benzene	µg/m³	6	10	10	9	8
Carbon tetrachloride	µg/m³	<3.1	<3.1	<3.1	<3.1	<6

TO15 in Canisters ug/m3						
Our Reference		237639-1	237639-3	237639-5	237639-6	237639-8
Your Reference	UNITS	BH208 - CAN	BH2 - CAN	BH201 - CAN	BH4 - CAN	BH213 -CAN
Date Sampled		26/02/2020	26/02/2020	26/02/2020	26/02/2020	26/02/2020
Type of sample		Air - Canister	Air - Canister	Air - Canister	Air - Canister	Air - Canister
Air Kit Security No.		3291	1688	3533	3642	2554
Cyclohexane	µg/m³	<1.7	<1.7	<1.7	<1.7	<3
Heptane	µg/m³	<2	<2	<2	<2	<4
Trichloroethene	µg/m³	<2.7	3	<2.7	<2.7	10
1,2-Dichloropropane	µg/m³	<2.3	<2.3	<2.3	<2.3	<5
1,4-Dioxane	µg/m³	<1.8	<1.8	<1.8	<1.8	<4
Bromodichloromethane	µg/m³	<3.4	<3.4	<3.4	<3.4	<7
Methyl Methacrylate	µg/m³	<2	<2	<2	<2	<4
MIBK	µg/m³	<20	<20	<20	<20	<40
cis-1,3-Dichloropropene	µg/m³	<2.3	<2.3	<2.3	<2.3	<5
trans-1,3-Dichloropropene	µg/m³	<2.3	<2.3	<2.3	<2.3	<5
Toluene	µg/m³	10	29	10	39	43
1,1,2-Trichloroethane	µg/m³	<2.7	<2.7	<2.7	<2.7	<5
Methyl Butyl Ketone	µg/m³	<2	<2	<2	<2	<4
Dibromochloromethane	µg/m³	<1.6	<1.6	<1.6	<1.6	<3
Tetrachloroethene	µg/m³	7	10	8	20	20
1,2-Dibromoethane	µg/m³	<3.8	<3.8	<3.8	<3.8	<8
Chlorobenzene	µg/m³	<2.3	<2.3	<2.3	<2.3	<5
Ethylbenzene	µg/m³	3	4	3	6	6
m-& p-Xylene	µg/m³	20	10	6	20	20
Styrene	µg/m³	4	<2.1	2	<2.1	<4
o-Xylene	µg/m³	8	5	2	6	6
Bromoform	µg/m³	<5.2	<5.2	<5.2	<5.2	<10
1,1,2,2-Tetrachloroethane	µg/m³	<3.4	<3.4	<3.4	<3.4	<7
4-ethyl toluene	µg/m³	7	<5	<2.5	<2.5	<5
1,3,5-Trimethylbenzene	µg/m³	20	3	<2.5	<2.5	<5
1,2,4-Trimethylbenzene	µg/m³	33	7	3	7	6
1,3-Dichlorobenzene	µg/m³	<3	<3	<3	<3	<6
Benzyl chloride	µg/m³	<2.6	<2.6	<2.6	<2.6	<5
1,4-Dichlorobenzene	µg/m³	<3	<3	<3	<3	<6
1,2-Dichlorobenzene	µg/m³	<3	<3	<3	<3	<6
1,2,4-Trichlorobenzene	µg/m³	<3.7	<3.7	<3.7	<3.7	<7
Naphthalene	µg/m³	3	<2.6	<2.6	<2.6	<5
Hexachloro- 1,3-butadiene	µg/m³	<5.3	<5.3	<5.3	<5.3	<10
Surrogate-Bromochloromethane	% rec	109	106	107	107	105
Surrogate -1,4-Difluorobenzene	% rec	100	101	101	101	100
Surrogate-Chlorobenzene-D5	% rec	98	98	97	98	98

TO15 in Canisters ug/m3			
Our Reference		237639-10	237639-12
Your Reference	UNITS	BD1 - CAN	BH204 - CAN
Date Sampled		26/02/2020	26/02/2020
Type of sample		Air - Canister	Air - Canister
Air Kit Security No.		3509	3651
Vacuum before Shipment	Hg"	-30	-30
Vacuum before Analysis	Hg"	-3	-8
Date prepared	-	28/02/2020	28/02/2020
Date analysed	-	28/02/2020	28/02/2020
Propylene	µg/m³	8	7
Dichlorodifluoromethane	µg/m³	<2.5	<2.5
Chloromethane	µg/m³	2	2
1,2-Dichlorotetrafluoroethane	µg/m³	<2.5	<2.5
Vinyl chloride	µg/m³	<1.3	<1.3
1,3-Butadiene	µg/m³	<1.1	<1.1
Bromomethane	µg/m³	<1.9	<1.9
Chloroethane	µg/m³	<1.3	<1.3
Ethanol	µg/m³	30	50
Acrolein	µg/m³	<11	<11
Trichlorofluoromethane (Freon 11)	µg/m³	<2.8	<2.8
Acetone	µg/m³	60	90
Isopropyl Alcohol	µg/m³	100	530
1,1-Dichloroethene	µg/m³	<2	<2
1,1,2-Trichlorotrifluoroethane	µg/m³	<3.8	<3.8
Methylene chloride (Dichloromethane)	µg/m³	<17	<17
Carbon Disulfide	µg/m³	<16	<16
trans-1,2-dichloroethene	µg/m³	<2	<2
MTBE	µg/m³	<1.8	<1.8
1,1- Dichloroethane	µg/m³	<2	<2
Vinyl Acetate	µg/m³	<1.8	<1.8
MEK	µg/m³	<15	<15
Hexane	µg/m³	10	6
cis-1,2-Dichloroethene	µg/m³	<2	<2
Ethyl Acetate	µg/m³	<1.8	<1.8
Chloroform	µg/m³	<2.4	<2.4
Tetrahydrofuran	µg/m³	<1.5	2
1,1,1-Trichloroethane	µg/m³	<2.7	<2.7
1,2-Dichloroethane	µg/m³	<2	<2
Benzene	µg/m³	10	10
Carbon tetrachloride	µg/m³	<3.1	<3.1

TO15 in Canisters ug/m3			
Our Reference		237639-10	237639-12
Your Reference	UNITS	BD1 - CAN	BH204 - CAN
Date Sampled		26/02/2020	26/02/2020
Type of sample		Air - Canister	Air - Canister
Air Kit Security No.		3509	3651
Cyclohexane	µg/m³	<1.7	<1.7
Heptane	µg/m³	<2	<2
Trichloroethene	µg/m³	7	4
1,2-Dichloropropane	µg/m³	<2.3	<2.3
1,4-Dioxane	µg/m³	<1.8	<1.8
Bromodichloromethane	µg/m³	<3.4	<3.4
Methyl Methacrylate	µg/m³	<2	<2
MIBK	µg/m³	<20	<20
cis-1,3-Dichloropropene	µg/m³	<2.3	<2.3
trans-1,3-Dichloropropene	µg/m³	<2.3	<2.3
Toluene	µg/m³	20	27
1,1,2-Trichloroethane	µg/m³	<2.7	<2.7
Methyl Butyl Ketone	µg/m³	<2	<2
Dibromochloromethane	µg/m³	<1.6	<1.6
Tetrachloroethene	µg/m³	10	20
1,2-Dibromoethane	µg/m³	<3.8	<3.8
Chlorobenzene	µg/m³	<2.3	<2.3
Ethylbenzene	µg/m³	3	6
m-& p-Xylene	µg/m³	9	10
Styrene	µg/m³	4	7
o-Xylene	µg/m³	3	5
Bromoform	µg/m³	<5.2	<5.2
1,1,2,2-Tetrachloroethane	µg/m³	<3.4	<3.4
4-ethyl toluene	µg/m³	<2.5	<5
1,3,5-Trimethylbenzene	µg/m³	<2.5	3
1,2,4-Trimethylbenzene	µg/m³	4	7
1,3-Dichlorobenzene	µg/m³	<3	<3
Benzyl chloride	µg/m³	<2.6	<2.6
1,4-Dichlorobenzene	µg/m³	<3	<3
1,2-Dichlorobenzene	µg/m³	<3	<3
1,2,4-Trichlorobenzene	µg/m³	<3.7	<3.7
Naphthalene	µg/m³	<2.6	<2.6
Hexachloro- 1,3-butadiene	µg/m³	<5.3	<5.3
Surrogate-Bromochloromethane	% rec	107	105
Surrogate -1,4-Difluorobenzene	% rec	99	101
Surrogate-Chlorobenzene-D5	% rec	96	98

Permanent Gas analysis						
Our Reference		237639-1	237639-3	237639-5	237639-6	237639-8
Your Reference	UNITS	BH208 - CAN	BH2 - CAN	BH201 - CAN	BH4 - CAN	BH213 -CAN
Date Sampled		26/02/2020	26/02/2020	26/02/2020	26/02/2020	26/02/2020
Type of sample		Air - Canister	Air - Canister	Air - Canister	Air - Canister	Air - Canister
Air Kit Security No.		3291	1688	3533	3642	2554
Date prepared	-	27/02/2020	27/02/2020	27/02/2020	27/02/2020	27/02/2020
Date analysed	-	27/02/2020	27/02/2020	27/02/2020	27/02/2020	27/02/2020
Methane (CH_4)	%	<0.01	<0.01	<0.01	<0.01	<0.01
Carbon Dioxide (CO_2)	%	1.6	0.13	1.8	0.10	0.20
Oxygen (O_2)	%	17	21	20	21	21
Carbon Monoxide (CO)	%	<0.01	<0.01	<0.01	<0.01	<0.01
Hydrogen Sulphide H_2S*	%	<0.1	<0.1	<0.1	<0.1	<0.1

Permanent Gas analysis			
Our Reference		237639-10	237639-12
Your Reference	UNITS	BD1 - CAN	BH204 - CAN
Date Sampled		26/02/2020	26/02/2020
Type of sample		Air - Canister	Air - Canister
Air Kit Security No.		3509	3651
Date prepared	-	27/02/2020	27/02/2020
Date analysed	-	27/02/2020	27/02/2020
Methane (CH_4)	%	<0.01	<0.01
Carbon Dioxide (CO_2)	%	1.8	0.20
Oxygen (O_2)	%	20	21
Carbon Monoxide (CO)	%	<0.01	<0.01
Hydrogen Sulphide H_2S*	%	<0.1	<0.1

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
AT-008	Determination of volatile organic compounds in charcoal tubes/badges/sorbents using CS2 extraction, based on NIOSH methods. Desorption efficiencies are not applied to results in ug/tube. Note where µg/m^3 results are supplied for SKC badges, the factors used are for 575-001, if 575-001 data is unavailable for an analyte then use 575-002 then 575-003 (exposure time must be supplied).
TO15	USEPA TO15 - Analysis of VOC's in air using USEPA TO15 and in house method AT-002
USEPA 18	Measurement of Gaseous Organic Compound Emissions by Gas Chromatography using USEPA m18.

QUALITY CONTROL: VOC in Carbon tubes					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			04/03/2020	[NT]	[NT]	[NT]	[NT]	04/03/2020	[NT]
Date analysed	-			06/03/2020	[NT]	[NT]	[NT]	[NT]	06/03/2020	[NT]
Isopropyl Alcohol*	µg/tube	5	AT-008	<5	[NT]	[NT]	[NT]	[NT]	106	[NT]
Surrogate Toluene-d8	%		AT-008	126	[NT]	[NT]	[NT]	[NT]	112	[NT]
Surrogate 4-Bromofluorobenzene	%		AT-008	126	[NT]	[NT]	[NT]	[NT]	115	[NT]

QUALITY CONTROL: TPH Air/ Air Phase Hydrocarbon						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			28/02/2020	1	28/02/2020	28/02/2020		28/02/2020	[NT]
Date analysed	-			28/02/2020	1	28/02/2020	28/02/2020		28/02/2020	[NT]
TPH C_5 - C_8 Aliphatic	µg/m³	200	AT-005	<200	1	<200	<200	0	91	[NT]
TPH C_9 - C_{12} Aliphatic	µg/m³	50	AT-005	<50	1	<50	<50	0	[NT]	[NT]
TPH C_9 - C_{10} Aromatic	µg/m³	100	AT-005	<100	1	<100	<100	0	92	[NT]
TPH C_6 - C_{10} - BTEX (F1)	µg/m³	200	TO15	<200	1	<200	<200	0	96	[NT]
TPH >C_{10} - C_{12} - Naphthalene (F2)	µg/m³	40	TO15	<40	1	140	130	7	96	[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	-7	-7	0	[NT]	[NT]
Date prepared	-			28/02/2020	1	28/02/2020	28/02/2020		28/02/2020	[NT]
Date analysed	-			28/02/2020	1	28/02/2020	28/02/2020		28/02/2020	[NT]
Propylene	ppbv	0.5	TO15	<0.5	1	4	4	0	111	[NT]
Dichlorodifluoromethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Chloromethane	ppbv	0.5	TO15	<0.5	1	0.8	0.7	13	[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	30	30	0	[NT]	[NT]
Acrolein	ppbv	5	TO15	<5	1	<5	<5	0	[NT]	[NT]
Trichlorofluoromethane (Freon 11)	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Acetone	ppbv	5	TO15	<5	1	30	30	0	[NT]	[NT]
Isopropyl Alcohol	ppbv	5	TO15	<5	1	30	30	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	5	TO15	<5	1	<5	<5	0	[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	5	TO15	<5	1	<5	<5	0	[NT]	[NT]
Hexane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	103	[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	<0.5	<0.5	0	[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	<0.5	<0.5	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	2	2	0	97	[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	98	[NT]
Heptane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	106	[NT]

QUALITY CONTROL: TO15 in Canisters/Bags						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Trichloroethene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[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	5	TO15	<5	1	<5	<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	3	3	0	104	[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	1	1	0	[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	0.7	0.7	0	106	[NT]
m-& p-Xylene	ppbv	1	TO15	<1	1	4	4	0	106	[NT]
Styrene	ppbv	0.5	TO15	<0.5	1	0.9	1	11	86	[NT]
o-Xylene	ppbv	0.5	TO15	<0.5	1	2	2	0	107	[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	1	1	0	115	[NT]
1,3,5-Trimethylbenzene	ppbv	0.5	TO15	<0.5	1	3	3	0	114	[NT]
1,2,4-Trimethylbenzene	ppbv	0.5	TO15	<0.5	1	6.6	6.6	0	107	[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	106	1	109	107	2	112	[NT]
Surrogate -1,4-Difluorobenzene	% rec		TO15	98	1	100	101	1	106	[NT]
Surrogate-Chlorobenzene-D5	% rec		TO15	94	1	98	98	0	101	[NT]

QUALITY CONTROL: TO15 in Canisters/Bags						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Vacuum before Shipment	Hg"			[NT]	5	-30	-30	0	[NT]	[NT]
Vacuum before Analysis	Hg"			[NT]	5	-10	-10	0	[NT]	[NT]
Date prepared	-			[NT]	5	28/02/2020	28/02/2020		[NT]	[NT]
Date analysed	-			[NT]	5	28/02/2020	28/02/2020		[NT]	[NT]
Propylene	ppbv	0.5	TO15	[NT]	5	5	5	0	[NT]	[NT]
Dichlorodifluoromethane	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Chloromethane	ppbv	0.5	TO15	[NT]	5	1	1	0	[NT]	[NT]
1,2-Dichlorotetrafluoroethane	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Vinyl chloride	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
1,3-Butadiene	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Bromomethane	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Chloroethane	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Ethanol	ppbv	5	TO15	[NT]	5	20	20	0	[NT]	[NT]
Acrolein	ppbv	5	TO15	[NT]	5	<5	<5	0	[NT]	[NT]
Trichlorofluoromethane (Freon 11)	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Acetone	ppbv	5	TO15	[NT]	5	30	30	0	[NT]	[NT]
Isopropyl Alcohol	ppbv	5	TO15	[NT]	5	50	50	0	[NT]	[NT]
1,1-Dichloroethene	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
1,1,2-Trichlorotrifluoroethane	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Methylene chloride (Dichloromethane)	ppbv	5	TO15	[NT]	5	<5	<5	0	[NT]	[NT]
Carbon Disulfide	ppbv	5	TO15	[NT]	5	<5	<5	0	[NT]	[NT]
trans-1,2-dichloroethene	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
MTBE	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
1,1- Dichloroethane	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Vinyl Acetate	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
MEK	ppbv	5	TO15	[NT]	5	<5	<5	0	[NT]	[NT]
Hexane	ppbv	0.5	TO15	[NT]	5	0.9	0.9	0	[NT]	[NT]
cis-1,2-Dichloroethene	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Ethyl Acetate	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Chloroform	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Tetrahydrofuran	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
1,1,1-Trichloroethane	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
1,2-Dichloroethane	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Benzene	ppbv	0.5	TO15	[NT]	5	4	4	0	[NT]	[NT]
Carbon tetrachloride	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Cyclohexane	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Heptane	ppbv	0.5	TO15	[NT]	5	<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	[NT]	[NT]
Trichloroethene	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
1,2-Dichloropropane	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
1,4-Dioxane	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Bromodichloromethane	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Methyl Methacrylate	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
MIBK	ppbv	5	TO15	[NT]	5	<5	<5	0	[NT]	[NT]
cis-1,3-Dichloropropene	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
trans-1,3-Dichloropropene	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Toluene	ppbv	0.5	TO15	[NT]	5	4	4	0	[NT]	[NT]
1,1,2-Trichloroethane	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Methyl Butyl Ketone	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Dibromochloromethane	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Tetrachloroethene	ppbv	0.5	TO15	[NT]	5	1	1	0	[NT]	[NT]
1,2-Dibromoethane	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Chlorobenzene	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	ppbv	0.5	TO15	[NT]	5	0.6	0.5	18	[NT]	[NT]
m-& p-Xylene	ppbv	1	TO15	[NT]	5	1	1	0	[NT]	[NT]
Styrene	ppbv	0.5	TO15	[NT]	5	0.6	0.6	0	[NT]	[NT]
o-Xylene	ppbv	0.5	TO15	[NT]	5	0.6	0.6	0	[NT]	[NT]
Bromoform	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
1,1,2,2-Tetrachloroethane	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
4-ethyl toluene	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
1,3,5-Trimethylbenzene	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
1,2,4-Trimethylbenzene	ppbv	0.5	TO15	[NT]	5	0.7	0.6	15	[NT]	[NT]
1,3-Dichlorobenzene	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Benzyl chloride	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
1,4-Dichlorobenzene	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
1,2-Dichlorobenzene	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
1,2,4-Trichlorobenzene	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Naphthalene	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Hexachloro- 1,3-butadiene	ppbv	0.5	TO15	[NT]	5	<0.5	<0.5	0	[NT]	[NT]
Surrogate-Bromochloromethane	% rec		TO15	[NT]	5	107	97	10	[NT]	[NT]
Surrogate -1,4-Difluorobenzene	% rec		TO15	[NT]	5	101	94	7	[NT]	[NT]
Surrogate-Chlorobenzene-D5	% rec		TO15	[NT]	5	97	92	5	[NT]	[NT]

QUALITY CONTROL: TO15 in Canisters/Bags						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Vacuum before Shipment	Hg"			[NT]	6	-30	-30	0	[NT]	[NT]
Vacuum before Analysis	Hg"			[NT]	6	-7	-7	0	[NT]	[NT]
Date prepared	-			[NT]	6	28/02/2020	28/02/2020		[NT]	[NT]
Date analysed	-			[NT]	6	28/02/2020	28/02/2020		[NT]	[NT]
Propylene	ppbv	0.5	TO15	[NT]	6	3	3	0	[NT]	[NT]
Dichlorodifluoromethane	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Chloromethane	ppbv	0.5	TO15	[NT]	6	0.7	0.8	13	[NT]	[NT]
1,2-Dichlorotetrafluoroethane	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Vinyl chloride	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
1,3-Butadiene	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Bromomethane	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Chloroethane	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Ethanol	ppbv	5	TO15	[NT]	6	30	30	0	[NT]	[NT]
Acrolein	ppbv	5	TO15	[NT]	6	<5	<5	0	[NT]	[NT]
Trichlorofluoromethane (Freon 11)	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Acetone	ppbv	5	TO15	[NT]	6	30	30	0	[NT]	[NT]
Isopropyl Alcohol	ppbv	5	TO15	[NT]	6	170	170	0	[NT]	[NT]
1,1-Dichloroethene	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
1,1,2-Trichlorotrifluoroethane	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Methylene chloride (Dichloromethane)	ppbv	5	TO15	[NT]	6	<5	<5	0	[NT]	[NT]
Carbon Disulfide	ppbv	5	TO15	[NT]	6	<5	<5	0	[NT]	[NT]
trans-1,2-dichloroethene	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
MTBE	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
1,1- Dichloroethane	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Vinyl Acetate	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
MEK	ppbv	5	TO15	[NT]	6	<5	<5	0	[NT]	[NT]
Hexane	ppbv	0.5	TO15	[NT]	6	0.6	0.5	18	[NT]	[NT]
cis-1,2-Dichloroethene	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Ethyl Acetate	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Chloroform	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Tetrahydrofuran	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
1,1,1-Trichloroethane	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
1,2-Dichloroethane	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Benzene	ppbv	0.5	TO15	[NT]	6	3	3	0	[NT]	[NT]
Carbon tetrachloride	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Cyclohexane	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Heptane	ppbv	0.5	TO15	[NT]	6	<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	[NT]	[NT]
Trichloroethene	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
1,2-Dichloropropane	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
1,4-Dioxane	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Bromodichloromethane	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Methyl Methacrylate	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
MIBK	ppbv	5	TO15	[NT]	6	<5	<5	0	[NT]	[NT]
cis-1,3-Dichloropropene	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
trans-1,3-Dichloropropene	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Toluene	ppbv	0.5	TO15	[NT]	6	10	10	0	[NT]	[NT]
1,1,2-Trichloroethane	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Methyl Butyl Ketone	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Dibromochloromethane	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Tetrachloroethene	ppbv	0.5	TO15	[NT]	6	3	3	0	[NT]	[NT]
1,2-Dibromoethane	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Chlorobenzene	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	ppbv	0.5	TO15	[NT]	6	1	1	0	[NT]	[NT]
m-& p-Xylene	ppbv	1	TO15	[NT]	6	4	4	0	[NT]	[NT]
Styrene	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
o-Xylene	ppbv	0.5	TO15	[NT]	6	1	2	67	[NT]	[NT]
Bromoform	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
1,1,2,2-Tetrachloroethane	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
4-ethyl toluene	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
1,3,5-Trimethylbenzene	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
1,2,4-Trimethylbenzene	ppbv	0.5	TO15	[NT]	6	1	1	0	[NT]	[NT]
1,3-Dichlorobenzene	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Benzyl chloride	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
1,4-Dichlorobenzene	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
1,2-Dichlorobenzene	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
1,2,4-Trichlorobenzene	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Naphthalene	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Hexachloro- 1,3-butadiene	ppbv	0.5	TO15	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Surrogate-Bromochloromethane	% rec		TO15	[NT]	6	107	98	9	[NT]	[NT]
Surrogate -1,4-Difluorobenzene	% rec		TO15	[NT]	6	101	95	6	[NT]	[NT]
Surrogate-Chlorobenzene-D5	% rec		TO15	[NT]	6	98	93	5	[NT]	[NT]

QUALITY CONTROL: TO15 in Canisters/Bags					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Vacuum before Shipment	Hg"			[NT]	10	-30	-30	0	[NT]	[NT]
Vacuum before Analysis	Hg"			[NT]	10	-3	-3	0	[NT]	[NT]
Date prepared	-			[NT]	10	28/02/2020	28/02/2020		[NT]	[NT]
Date analysed	-			[NT]	10	28/02/2020	28/02/2020		[NT]	[NT]
Propylene	ppbv	0.5	TO15	[NT]	10	5	4	22	[NT]	[NT]
Dichlorodifluoromethane	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Chloromethane	ppbv	0.5	TO15	[NT]	10	1	1	0	[NT]	[NT]
1,2-Dichlorotetrafluoroethane	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Vinyl chloride	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
1,3-Butadiene	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Bromomethane	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Chloroethane	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Ethanol	ppbv	5	TO15	[NT]	10	20	20	0	[NT]	[NT]
Acrolein	ppbv	5	TO15	[NT]	10	<5	<5	0	[NT]	[NT]
Trichlorofluoromethane (Freon 11)	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Acetone	ppbv	5	TO15	[NT]	10	30	30	0	[NT]	[NT]
Isopropyl Alcohol	ppbv	5	TO15	[NT]	10	40	40	0	[NT]	[NT]
1,1-Dichloroethene	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
1,1,2-Trichlorotrifluoroethane	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Methylene chloride (Dichloromethane)	ppbv	5	TO15	[NT]	10	<5	<5	0	[NT]	[NT]
Carbon Disulfide	ppbv	5	TO15	[NT]	10	<5	<5	0	[NT]	[NT]
trans-1,2-dichloroethene	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
MTBE	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
1,1- Dichloroethane	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Vinyl Acetate	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
MEK	ppbv	5	TO15	[NT]	10	<5	<5	0	[NT]	[NT]
Hexane	ppbv	0.5	TO15	[NT]	10	4	4	0	[NT]	[NT]
cis-1,2-Dichloroethene	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Ethyl Acetate	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Chloroform	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Tetrahydrofuran	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
1,1,1-Trichloroethane	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
1,2-Dichloroethane	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Benzene	ppbv	0.5	TO15	[NT]	10	4	4	0	[NT]	[NT]
Carbon tetrachloride	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Cyclohexane	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Heptane	ppbv	0.5	TO15	[NT]	10	<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	[NT]	[NT]
Trichloroethene	ppbv	0.5	TO15	[NT]	10	1	1	0	[NT]	[NT]
1,2-Dichloropropane	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
1,4-Dioxane	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Bromodichloromethane	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Methyl Methacrylate	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
MIBK	ppbv	5	TO15	[NT]	10	<5	<5	0	[NT]	[NT]
cis-1,3-Dichloropropene	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
trans-1,3-Dichloropropene	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Toluene	ppbv	0.5	TO15	[NT]	10	4	4	0	[NT]	[NT]
1,1,2-Trichloroethane	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Methyl Butyl Ketone	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Dibromochloromethane	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Tetrachloroethene	ppbv	0.5	TO15	[NT]	10	2	2	0	[NT]	[NT]
1,2-Dibromoethane	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Chlorobenzene	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	ppbv	0.5	TO15	[NT]	10	0.7	0.7	0	[NT]	[NT]
m-& p-Xylene	ppbv	1	TO15	[NT]	10	2	2	0	[NT]	[NT]
Styrene	ppbv	0.5	TO15	[NT]	10	0.9	0.9	0	[NT]	[NT]
o-Xylene	ppbv	0.5	TO15	[NT]	10	0.8	0.8	0	[NT]	[NT]
Bromoform	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
1,1,2,2-Tetrachloroethane	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
4-ethyl toluene	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
1,3,5-Trimethylbenzene	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
1,2,4-Trimethylbenzene	ppbv	0.5	TO15	[NT]	10	0.9	0.9	0	[NT]	[NT]
1,3-Dichlorobenzene	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Benzyl chloride	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
1,4-Dichlorobenzene	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
1,2-Dichlorobenzene	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
1,2,4-Trichlorobenzene	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Naphthalene	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Hexachloro- 1,3-butadiene	ppbv	0.5	TO15	[NT]	10	<0.5	<0.5	0	[NT]	[NT]
Surrogate-Bromochloromethane	% rec		TO15	[NT]	10	107	98	9	[NT]	[NT]
Surrogate -1,4-Difluorobenzene	% rec		TO15	[NT]	10	99	96	3	[NT]	[NT]
Surrogate-Chlorobenzene-D5	% rec		TO15	[NT]	10	96	94	2	[NT]	[NT]

QUALITY CONTROL: TO15 in Canisters ug/m3						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Vacuum before Shipment	Hg"			[NT]	1	-30	-30	0	[NT]	[NT]
Vacuum before Analysis	Hg"			[NT]	1	-7	-7	0	[NT]	[NT]
Date prepared	-			28/02/2020	1	28/02/2020	28/02/2020		[NT]	[NT]
Date analysed	-			28/02/2020	1	28/02/2020	28/02/2020		[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	<2.5	<2.5	0	[NT]	[NT]
Chloromethane	µg/m³	1.0	TO15	<1.0	1	2	2	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	60	60	0	[NT]	[NT]
Acrolein	µg/m³	11	TO15	<11	1	<11	<11	0	[NT]	[NT]
Trichlorofluoromethane (Freon 11)	µg/m³	2.8	TO15	<2.8	1	<2.8	<2.8	0	[NT]	[NT]
Acetone	µg/m³	11.9	TO15	<11.9	1	70	70	0	[NT]	[NT]
Isopropyl Alcohol	µg/m³	12	TO15	<12	1	80	80	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	17	USEPA 18	<17	1	<17	<17	0	[NT]	[NT]
Carbon Disulfide	µg/m³	16	TO15	<16	1	<16	<16	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	15	TO15	<15	1	<15	<15	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	<2.4	<2.4	0	[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	<2.7	<2.7	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	6	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]

QUALITY CONTROL: TO15 in Canisters ug/m3						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Trichloroethene	µg/m³	2.7	TO15	<2.7	1	<2.7	<2.7	0	[NT]	[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	20	TO15	<20	1	<20	<20	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	10	10	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	7	7	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	3	3	0	[NT]	[NT]
m-& p-Xylene	µg/m³	4.3	TO15	<4.3	1	20	20	0	[NT]	[NT]
Styrene	µg/m³	2.1	TO15	<2.1	1	4	5	22	[NT]	[NT]
o-Xylene	µg/m³	2.2	TO15	<2.2	1	8	8	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	7	7	0	[NT]	[NT]
1,3,5-Trimethylbenzene	µg/m³	2.5	TO15	<2.5	1	20	20	0	[NT]	[NT]
1,2,4-Trimethylbenzene	µg/m³	2.5	TO15	<2.5	1	33	33	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	3	3	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	106	1	109	107	2	[NT]	[NT]
Surrogate -1,4-Difluorobenzene	% rec		TO15	98	1	100	101	1	[NT]	[NT]
Surrogate-Chlorobenzene-D5	% rec		TO15	94	1	98	98	0	[NT]	[NT]

QUALITY CONTROL: TO15 in Canisters ug/m3					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Vacuum before Shipment	Hg"			[NT]	5	-30	-30	0	[NT]	[NT]
Vacuum before Analysis	Hg"			[NT]	5	-10	-10	0	[NT]	[NT]
Date prepared	-			[NT]	5	28/02/2020	28/02/2020		[NT]	[NT]
Date analysed	-			[NT]	5	28/02/2020	28/02/2020		[NT]	[NT]
Propylene	µg/m³	0.9	TO15	[NT]	5	8	8	0	[NT]	[NT]
Dichlorodifluoromethane	µg/m³	2.5	TO15	[NT]	5	<2.5	<2.5	0	[NT]	[NT]
Chloromethane	µg/m³	1.0	TO15	[NT]	5	2	2	0	[NT]	[NT]
1,2-Dichlorotetrafluoroethane	µg/m³	2.5	TO15	[NT]	5	<2.5	<2.5	0	[NT]	[NT]
Vinyl chloride	µg/m³	1.3	TO15	[NT]	5	<1.3	<1.3	0	[NT]	[NT]
1,3-Butadiene	µg/m³	1.1	TO15	[NT]	5	<1.1	<1.1	0	[NT]	[NT]
Bromomethane	µg/m³	1.9	TO15	[NT]	5	<1.9	<1.9	0	[NT]	[NT]
Chloroethane	µg/m³	1.3	TO15	[NT]	5	<1.3	<1.3	0	[NT]	[NT]
Ethanol	µg/m³	9	TO15	[NT]	5	40	40	0	[NT]	[NT]
Acrolein	µg/m³	11	TO15	[NT]	5	<11	<11	0	[NT]	[NT]
Trichlorofluoromethane (Freon 11)	µg/m³	2.8	TO15	[NT]	5	<2.8	<2.8	0	[NT]	[NT]
Acetone	µg/m³	11.9	TO15	[NT]	5	70	70	0	[NT]	[NT]
Isopropyl Alcohol	µg/m³	12	TO15	[NT]	5	100	100	0	[NT]	[NT]
1,1-Dichloroethene	µg/m³	2.0	TO15	[NT]	5	<2	<2	0	[NT]	[NT]
1,1,2-Trichlorotrifluoroethane	µg/m³	3.8	TO15	[NT]	5	<3.8	<3.8	0	[NT]	[NT]
Methylene chloride (Dichloromethane)	µg/m³	17	USEPA 18	[NT]	5	<17	<17	0	[NT]	[NT]
Carbon Disulfide	µg/m³	16	TO15	[NT]	5	<16	<16	0	[NT]	[NT]
trans-1,2-dichloroethene	µg/m³	2.0	TO15	[NT]	5	<2	<2	0	[NT]	[NT]
MTBE	µg/m³	1.8	TO15	[NT]	5	<1.8	<1.8	0	[NT]	[NT]
1,1- Dichloroethane	µg/m³	2.0	TO15	[NT]	5	<2	<2	0	[NT]	[NT]
Vinyl Acetate	µg/m³	1.8	TO15	[NT]	5	<1.8	<1.8	0	[NT]	[NT]
MEK	µg/m³	15	TO15	[NT]	5	<15	<15	0	[NT]	[NT]
Hexane	µg/m³	1.8	TO15	[NT]	5	3	3	0	[NT]	[NT]
cis-1,2-Dichloroethene	µg/m³	2.0	TO15	[NT]	5	<2	<2	0	[NT]	[NT]
Ethyl Acetate	µg/m³	1.8	TO15	[NT]	5	<1.8	<1.8	0	[NT]	[NT]
Chloroform	µg/m³	2.4	TO15	[NT]	5	<2.4	<2.4	0	[NT]	[NT]
Tetrahydrofuran	µg/m³	1.5	TO15	[NT]	5	<1.5	<1.5	0	[NT]	[NT]
1,1,1-Trichloroethane	µg/m³	2.7	TO15	[NT]	5	<2.7	<2.7	0	[NT]	[NT]
1,2-Dichloroethane	µg/m³	2.0	TO15	[NT]	5	<2	<2	0	[NT]	[NT]
Benzene	µg/m³	1.6	TO15	[NT]	5	10	10	0	[NT]	[NT]
Carbon tetrachloride	µg/m³	3.1	TO15	[NT]	5	<3.1	<3.1	0	[NT]	[NT]
Cyclohexane	µg/m³	1.7	TO15	[NT]	5	<1.7	<1.7	0	[NT]	[NT]
Heptane	µg/m³	2.0	TO15	[NT]	5	<2	<2	0	[NT]	[NT]

QUALITY CONTROL: TO15 in Canisters ug/m3					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Trichloroethene	µg/m³	2.7	TO15	[NT]	5	<2.7	<2.7	0	[NT]	[NT]
1,2-Dichloropropane	µg/m³	2.3	TO15	[NT]	5	<2.3	<2.3	0	[NT]	[NT]
1,4-Dioxane	µg/m³	1.8	TO15	[NT]	5	<1.8	<1.8	0	[NT]	[NT]
Bromodichloromethane	µg/m³	3.4	TO15	[NT]	5	<3.4	<3.4	0	[NT]	[NT]
Methyl Methacrylate	µg/m³	2.0	TO15	[NT]	5	<2	<2	0	[NT]	[NT]
MIBK	µg/m³	20	TO15	[NT]	5	<20	<20	0	[NT]	[NT]
cis-1,3-Dichloropropene	µg/m³	2.3	TO15	[NT]	5	<2.3	<2.3	0	[NT]	[NT]
trans-1,3-Dichloropropene	µg/m³	2.3	TO15	[NT]	5	<2.3	<2.3	0	[NT]	[NT]
Toluene	µg/m³	1.9	TO15	[NT]	5	10	10	0	[NT]	[NT]
1,1,2-Trichloroethane	µg/m³	2.7	TO15	[NT]	5	<2.7	<2.7	0	[NT]	[NT]
Methyl Butyl Ketone	µg/m³	2.0	TO15	[NT]	5	<2	<2	0	[NT]	[NT]
Dibromochloromethane	µg/m³	1.6	TO15	[NT]	5	<1.6	<1.6	0	[NT]	[NT]
Tetrachloroethene	µg/m³	3.4	TO15	[NT]	5	8	10	22	[NT]	[NT]
1,2-Dibromoethane	µg/m³	3.8	TO15	[NT]	5	<3.8	<3.8	0	[NT]	[NT]
Chlorobenzene	µg/m³	2.3	TO15	[NT]	5	<2.3	<2.3	0	[NT]	[NT]
Ethylbenzene	µg/m³	2.2	TO15	[NT]	5	3	2	40	[NT]	[NT]
m-& p-Xylene	µg/m³	4.3	TO15	[NT]	5	6	6	0	[NT]	[NT]
Styrene	µg/m³	2.1	TO15	[NT]	5	2	2	0	[NT]	[NT]
o-Xylene	µg/m³	2.2	TO15	[NT]	5	2	2	0	[NT]	[NT]
Bromoform	µg/m³	5.2	TO15	[NT]	5	<5.2	<5.2	0	[NT]	[NT]
1,1,2,2-Tetrachloroethane	µg/m³	3.4	TO15	[NT]	5	<3.4	<3.4	0	[NT]	[NT]
4-ethyl toluene	µg/m³	2.5	TO15	[NT]	5	<2.5	<2.5	0	[NT]	[NT]
1,3,5-Trimethylbenzene	µg/m³	2.5	TO15	[NT]	5	<2.5	<2.5	0	[NT]	[NT]
1,2,4-Trimethylbenzene	µg/m³	2.5	TO15	[NT]	5	3	3	0	[NT]	[NT]
1,3-Dichlorobenzene	µg/m³	3.0	TO15	[NT]	5	<3	<3	0	[NT]	[NT]
Benzyl chloride	µg/m³	2.6	TO15	[NT]	5	<2.6	<2.6	0	[NT]	[NT]
1,4-Dichlorobenzene	µg/m³	3.0	TO15	[NT]	5	<3	<3	0	[NT]	[NT]
1,2-Dichlorobenzene	µg/m³	3.0	TO15	[NT]	5	<3	<3	0	[NT]	[NT]
1,2,4-Trichlorobenzene	µg/m³	3.7	TO15	[NT]	5	<3.7	<3.7	0	[NT]	[NT]
Naphthalene	µg/m³	2.6	TO15	[NT]	5	<2.6	<2.6	0	[NT]	[NT]
Hexachloro- 1,3-butadiene	µg/m³	5.3	TO15	[NT]	5	<5.3	<5.3	0	[NT]	[NT]
Surrogate-Bromochloromethane	% rec		TO15	[NT]	5	107	97	10	[NT]	[NT]
Surrogate -1,4-Difluorobenzene	% rec		TO15	[NT]	5	101	94	7	[NT]	[NT]
Surrogate-Chlorobenzene-D5	% rec		TO15	[NT]	5	97	92	5	[NT]	[NT]

QUALITY CONTROL: TO15 in Canisters ug/m3					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Vacuum before Shipment	Hg"			[NT]	6	-30	-30	0	[NT]	[NT]
Vacuum before Analysis	Hg"			[NT]	6	-7	-7	0	[NT]	[NT]
Date prepared	-			[NT]	6	28/02/2020	28/02/2020		[NT]	[NT]
Date analysed	-			[NT]	6	28/02/2020	28/02/2020		[NT]	[NT]
Propylene	µg/m³	0.9	TO15	[NT]	6	5	4	22	[NT]	[NT]
Dichlorodifluoromethane	µg/m³	2.5	TO15	[NT]	6	<2.5	<2.5	0	[NT]	[NT]
Chloromethane	µg/m³	1.0	TO15	[NT]	6	1	2	67	[NT]	[NT]
1,2-Dichlorotetrafluoroethane	µg/m³	2.5	TO15	[NT]	6	<2.5	<2.5	0	[NT]	[NT]
Vinyl chloride	µg/m³	1.3	TO15	[NT]	6	<1.3	<1.3	0	[NT]	[NT]
1,3-Butadiene	µg/m³	1.1	TO15	[NT]	6	<1.1	<1.1	0	[NT]	[NT]
Bromomethane	µg/m³	1.9	TO15	[NT]	6	<1.9	<1.9	0	[NT]	[NT]
Chloroethane	µg/m³	1.3	TO15	[NT]	6	<1.3	<1.3	0	[NT]	[NT]
Ethanol	µg/m³	9	TO15	[NT]	6	60	50	18	[NT]	[NT]
Acrolein	µg/m³	11	TO15	[NT]	6	<11	<11	0	[NT]	[NT]
Trichlorofluoromethane (Freon 11)	µg/m³	2.8	TO15	[NT]	6	<2.8	<2.8	0	[NT]	[NT]
Acetone	µg/m³	11.9	TO15	[NT]	6	80	80	0	[NT]	[NT]
Isopropyl Alcohol	µg/m³	12	TO15	[NT]	6	430	420	2	[NT]	[NT]
1,1-Dichloroethene	µg/m³	2.0	TO15	[NT]	6	<2	<2	0	[NT]	[NT]
1,1,2-Trichlorotrifluoroethane	µg/m³	3.8	TO15	[NT]	6	<3.8	<3.8	0	[NT]	[NT]
Methylene chloride (Dichloromethane)	µg/m³	17	USEPA 18	[NT]	6	<17	<17	0	[NT]	[NT]
Carbon Disulfide	µg/m³	16	TO15	[NT]	6	<16	<16	0	[NT]	[NT]
trans-1,2-dichloroethene	µg/m³	2.0	TO15	[NT]	6	<2	<2	0	[NT]	[NT]
MTBE	µg/m³	1.8	TO15	[NT]	6	<1.8	<1.8	0	[NT]	[NT]
1,1- Dichloroethane	µg/m³	2.0	TO15	[NT]	6	<2	<2	0	[NT]	[NT]
Vinyl Acetate	µg/m³	1.8	TO15	[NT]	6	<1.8	<1.8	0	[NT]	[NT]
MEK	µg/m³	15	TO15	[NT]	6	<15	<15	0	[NT]	[NT]
Hexane	µg/m³	1.8	TO15	[NT]	6	2	2	0	[NT]	[NT]
cis-1,2-Dichloroethene	µg/m³	2.0	TO15	[NT]	6	<2	<2	0	[NT]	[NT]
Ethyl Acetate	µg/m³	1.8	TO15	[NT]	6	<1.8	<1.8	0	[NT]	[NT]
Chloroform	µg/m³	2.4	TO15	[NT]	6	<2.4	<2.4	0	[NT]	[NT]
Tetrahydrofuran	µg/m³	1.5	TO15	[NT]	6	<1.5	<1.5	0	[NT]	[NT]
1,1,1-Trichloroethane	µg/m³	2.7	TO15	[NT]	6	<2.7	<2.7	0	[NT]	[NT]
1,2-Dichloroethane	µg/m³	2.0	TO15	[NT]	6	<2	<2	0	[NT]	[NT]
Benzene	µg/m³	1.6	TO15	[NT]	6	9	10	11	[NT]	[NT]
Carbon tetrachloride	µg/m³	3.1	TO15	[NT]	6	<3.1	<3.1	0	[NT]	[NT]
Cyclohexane	µg/m³	1.7	TO15	[NT]	6	<1.7	<1.7	0	[NT]	[NT]
Heptane	µg/m³	2.0	TO15	[NT]	6	<2	<2	0	[NT]	[NT]

QUALITY CONTROL: TO15 in Canisters ug/m3					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Trichloroethene	µg/m³	2.7	TO15	[NT]	6	<2.7	<2.7	0	[NT]	[NT]
1,2-Dichloropropane	µg/m³	2.3	TO15	[NT]	6	<2.3	<2.3	0	[NT]	[NT]
1,4-Dioxane	µg/m³	1.8	TO15	[NT]	6	<1.8	<1.8	0	[NT]	[NT]
Bromodichloromethane	µg/m³	3.4	TO15	[NT]	6	<3.4	<3.4	0	[NT]	[NT]
Methyl Methacrylate	µg/m³	2.0	TO15	[NT]	6	<2	<2	0	[NT]	[NT]
MIBK	µg/m³	20	TO15	[NT]	6	<20	<20	0	[NT]	[NT]
cis-1,3-Dichloropropene	µg/m³	2.3	TO15	[NT]	6	<2.3	<2.3	0	[NT]	[NT]
trans-1,3-Dichloropropene	µg/m³	2.3	TO15	[NT]	6	<2.3	<2.3	0	[NT]	[NT]
Toluene	µg/m³	1.9	TO15	[NT]	6	39	38	3	[NT]	[NT]
1,1,2-Trichloroethane	µg/m³	2.7	TO15	[NT]	6	<2.7	<2.7	0	[NT]	[NT]
Methyl Butyl Ketone	µg/m³	2.0	TO15	[NT]	6	<2	<2	0	[NT]	[NT]
Dibromochloromethane	µg/m³	1.6	TO15	[NT]	6	<1.6	<1.6	0	[NT]	[NT]
Tetrachloroethene	µg/m³	3.4	TO15	[NT]	6	20	20	0	[NT]	[NT]
1,2-Dibromoethane	µg/m³	3.8	TO15	[NT]	6	<3.8	<3.8	0	[NT]	[NT]
Chlorobenzene	µg/m³	2.3	TO15	[NT]	6	<2.3	<2.3	0	[NT]	[NT]
Ethylbenzene	µg/m³	2.2	TO15	[NT]	6	6	6	0	[NT]	[NT]
m-& p-Xylene	µg/m³	4.3	TO15	[NT]	6	20	20	0	[NT]	[NT]
Styrene	µg/m³	2.1	TO15	[NT]	6	<2.1	<2.1	0	[NT]	[NT]
o-Xylene	µg/m³	2.2	TO15	[NT]	6	6	7	15	[NT]	[NT]
Bromoform	µg/m³	5.2	TO15	[NT]	6	<5.2	<5.2	0	[NT]	[NT]
1,1,2,2-Tetrachloroethane	µg/m³	3.4	TO15	[NT]	6	<3.4	<3.4	0	[NT]	[NT]
4-ethyl toluene	µg/m³	2.5	TO15	[NT]	6	<2.5	<2.5	0	[NT]	[NT]
1,3,5-Trimethylbenzene	µg/m³	2.5	TO15	[NT]	6	<2.5	<2.5	0	[NT]	[NT]
1,2,4-Trimethylbenzene	µg/m³	2.5	TO15	[NT]	6	7	6	15	[NT]	[NT]
1,3-Dichlorobenzene	µg/m³	3.0	TO15	[NT]	6	<3	<3	0	[NT]	[NT]
Benzyl chloride	µg/m³	2.6	TO15	[NT]	6	<2.6	<2.6	0	[NT]	[NT]
1,4-Dichlorobenzene	µg/m³	3.0	TO15	[NT]	6	<3	<3	0	[NT]	[NT]
1,2-Dichlorobenzene	µg/m³	3.0	TO15	[NT]	6	<3	<3	0	[NT]	[NT]
1,2,4-Trichlorobenzene	µg/m³	3.7	TO15	[NT]	6	<3.7	<3.7	0	[NT]	[NT]
Naphthalene	µg/m³	2.6	TO15	[NT]	6	<2.6	<2.6	0	[NT]	[NT]
Hexachloro- 1,3-butadiene	µg/m³	5.3	TO15	[NT]	6	<5.3	<5.3	0	[NT]	[NT]
Surrogate-Bromochloromethane	% rec		TO15	[NT]	6	107	98	9	[NT]	[NT]
Surrogate -1,4-Difluorobenzene	% rec		TO15	[NT]	6	101	95	6	[NT]	[NT]
Surrogate-Chlorobenzene-D5	% rec		TO15	[NT]	6	98	93	5	[NT]	[NT]

QUALITY CONTROL: TO15 in Canisters ug/m3					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Vacuum before Shipment	Hg"			[NT]	10	-30	-30	0	[NT]	[NT]
Vacuum before Analysis	Hg"			[NT]	10	-3	-3	0	[NT]	[NT]
Date prepared	-			[NT]	10	28/02/2020	28/02/2020		[NT]	[NT]
Date analysed	-			[NT]	10	28/02/2020	28/02/2020		[NT]	[NT]
Propylene	µg/m³	0.9	TO15	[NT]	10	8	8	0	[NT]	[NT]
Dichlorodifluoromethane	µg/m³	2.5	TO15	[NT]	10	<2.5	<2.5	0	[NT]	[NT]
Chloromethane	µg/m³	1.0	TO15	[NT]	10	2	2	0	[NT]	[NT]
1,2-Dichlorotetrafluoroethane	µg/m³	2.5	TO15	[NT]	10	<2.5	<2.5	0	[NT]	[NT]
Vinyl chloride	µg/m³	1.3	TO15	[NT]	10	<1.3	<1.3	0	[NT]	[NT]
1,3-Butadiene	µg/m³	1.1	TO15	[NT]	10	<1.1	<1.1	0	[NT]	[NT]
Bromomethane	µg/m³	1.9	TO15	[NT]	10	<1.9	<1.9	0	[NT]	[NT]
Chloroethane	µg/m³	1.3	TO15	[NT]	10	<1.3	<1.3	0	[NT]	[NT]
Ethanol	µg/m³	9	TO15	[NT]	10	30	30	0	[NT]	[NT]
Acrolein	µg/m³	11	TO15	[NT]	10	<11	<11	0	[NT]	[NT]
Trichlorofluoromethane (Freon 11)	µg/m³	2.8	TO15	[NT]	10	<2.8	<2.8	0	[NT]	[NT]
Acetone	µg/m³	11.9	TO15	[NT]	10	60	60	0	[NT]	[NT]
Isopropyl Alcohol	µg/m³	12	TO15	[NT]	10	100	100	0	[NT]	[NT]
1,1-Dichloroethene	µg/m³	2.0	TO15	[NT]	10	<2	<2	0	[NT]	[NT]
1,1,2-Trichlorotrifluoroethane	µg/m³	3.8	TO15	[NT]	10	<3.8	<3.8	0	[NT]	[NT]
Methylene chloride (Dichloromethane)	µg/m³	17	USEPA 18	[NT]	10	<17	<17	0	[NT]	[NT]
Carbon Disulfide	µg/m³	16	TO15	[NT]	10	<16	<16	0	[NT]	[NT]
trans-1,2-dichloroethene	µg/m³	2.0	TO15	[NT]	10	<2	<2	0	[NT]	[NT]
MTBE	µg/m³	1.8	TO15	[NT]	10	<1.8	<1.8	0	[NT]	[NT]
1,1- Dichloroethane	µg/m³	2.0	TO15	[NT]	10	<2	<2	0	[NT]	[NT]
Vinyl Acetate	µg/m³	1.8	TO15	[NT]	10	<1.8	<1.8	0	[NT]	[NT]
MEK	µg/m³	15	TO15	[NT]	10	<15	<15	0	[NT]	[NT]
Hexane	µg/m³	1.8	TO15	[NT]	10	10	10	0	[NT]	[NT]
cis-1,2-Dichloroethene	µg/m³	2.0	TO15	[NT]	10	<2	<2	0	[NT]	[NT]
Ethyl Acetate	µg/m³	1.8	TO15	[NT]	10	<1.8	<1.8	0	[NT]	[NT]
Chloroform	µg/m³	2.4	TO15	[NT]	10	<2.4	<2.4	0	[NT]	[NT]
Tetrahydrofuran	µg/m³	1.5	TO15	[NT]	10	<1.5	<1.5	0	[NT]	[NT]
1,1,1-Trichloroethane	µg/m³	2.7	TO15	[NT]	10	<2.7	<2.7	0	[NT]	[NT]
1,2-Dichloroethane	µg/m³	2.0	TO15	[NT]	10	<2	<2	0	[NT]	[NT]
Benzene	µg/m³	1.6	TO15	[NT]	10	10	10	0	[NT]	[NT]
Carbon tetrachloride	µg/m³	3.1	TO15	[NT]	10	<3.1	<3.1	0	[NT]	[NT]
Cyclohexane	µg/m³	1.7	TO15	[NT]	10	<1.7	<1.7	0	[NT]	[NT]
Heptane	µg/m³	2.0	TO15	[NT]	10	<2	<2	0	[NT]	[NT]

QUALITY CONTROL: TO15 in Canisters ug/m3					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Trichloroethene	µg/m³	2.7	TO15	[NT]	10	7	7	0	[NT]	[NT]
1,2-Dichloropropane	µg/m³	2.3	TO15	[NT]	10	<2.3	<2.3	0	[NT]	[NT]
1,4-Dioxane	µg/m³	1.8	TO15	[NT]	10	<1.8	<1.8	0	[NT]	[NT]
Bromodichloromethane	µg/m³	3.4	TO15	[NT]	10	<3.4	<3.4	0	[NT]	[NT]
Methyl Methacrylate	µg/m³	2.0	TO15	[NT]	10	<2	<2	0	[NT]	[NT]
MIBK	µg/m³	20	TO15	[NT]	10	<20	<20	0	[NT]	[NT]
cis-1,3-Dichloropropene	µg/m³	2.3	TO15	[NT]	10	<2.3	<2.3	0	[NT]	[NT]
trans-1,3-Dichloropropene	µg/m³	2.3	TO15	[NT]	10	<2.3	<2.3	0	[NT]	[NT]
Toluene	µg/m³	1.9	TO15	[NT]	10	20	20	0	[NT]	[NT]
1,1,2-Trichloroethane	µg/m³	2.7	TO15	[NT]	10	<2.7	<2.7	0	[NT]	[NT]
Methyl Butyl Ketone	µg/m³	2.0	TO15	[NT]	10	<2	<2	0	[NT]	[NT]
Dibromochloromethane	µg/m³	1.6	TO15	[NT]	10	<1.6	<1.6	0	[NT]	[NT]
Tetrachloroethene	µg/m³	3.4	TO15	[NT]	10	10	10	0	[NT]	[NT]
1,2-Dibromoethane	µg/m³	3.8	TO15	[NT]	10	<3.8	<3.8	0	[NT]	[NT]
Chlorobenzene	µg/m³	2.3	TO15	[NT]	10	<2.3	<2.3	0	[NT]	[NT]
Ethylbenzene	µg/m³	2.2	TO15	[NT]	10	3	3	0	[NT]	[NT]
m-& p-Xylene	µg/m³	4.3	TO15	[NT]	10	9	8	12	[NT]	[NT]
Styrene	µg/m³	2.1	TO15	[NT]	10	4	4	0	[NT]	[NT]
o-Xylene	µg/m³	2.2	TO15	[NT]	10	3	3	0	[NT]	[NT]
Bromoform	µg/m³	5.2	TO15	[NT]	10	<5.2	<5.2	0	[NT]	[NT]
1,1,2,2-Tetrachloroethane	µg/m³	3.4	TO15	[NT]	10	<3.4	<3.4	0	[NT]	[NT]
4-ethyl toluene	µg/m³	2.5	TO15	[NT]	10	<2.5	<2.5	0	[NT]	[NT]
1,3,5-Trimethylbenzene	µg/m³	2.5	TO15	[NT]	10	<2.5	<2.5	0	[NT]	[NT]
1,2,4-Trimethylbenzene	µg/m³	2.5	TO15	[NT]	10	4	5	22	[NT]	[NT]
1,3-Dichlorobenzene	µg/m³	3.0	TO15	[NT]	10	<3	<3	0	[NT]	[NT]
Benzyl chloride	µg/m³	2.6	TO15	[NT]	10	<2.6	<2.6	0	[NT]	[NT]
1,4-Dichlorobenzene	µg/m³	3.0	TO15	[NT]	10	<3	<3	0	[NT]	[NT]
1,2-Dichlorobenzene	µg/m³	3.0	TO15	[NT]	10	<3	<3	0	[NT]	[NT]
1,2,4-Trichlorobenzene	µg/m³	3.7	TO15	[NT]	10	<3.7	<3.7	0	[NT]	[NT]
Naphthalene	µg/m³	2.6	TO15	[NT]	10	<2.6	<2.6	0	[NT]	[NT]
Hexachloro- 1,3-butadiene	µg/m³	5.3	TO15	[NT]	10	<5.3	<5.3	0	[NT]	[NT]
Surrogate-Bromochloromethane	% rec		TO15	[NT]	10	107	98	9	[NT]	[NT]
Surrogate -1,4-Difluorobenzene	% rec		TO15	[NT]	10	99	96	3	[NT]	[NT]
Surrogate-Chlorobenzene-D5	% rec		TO15	[NT]	10	96	94	2	[NT]	[NT]

QUALITY CONTROL: Permanent Gas analysis						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			27/02/2020	1	27/02/2020	27/02/2020		27/02/2020	[NT]
Date analysed	-			27/02/2020	1	27/02/2020	27/02/2020		27/02/2020	[NT]
Methane (CH_4)	%	0.01	AT-003	<0.01	1	<0.01	<0.01	0	97	[NT]
Carbon Dioxide (CO_2)	%	0.01	AT-003	<0.01	1	1.6	1.6	0	99	[NT]
Oxygen (O_2)	%	0.01	AT-003	<0.01	1	17	17	0	98	[NT]
Carbon Monoxide (CO)	%	0.01	AT-003	<0.01	1	<0.01	<0.01	0	106	[NT]
Hydrogen Sulphide H_2S*	%	0.1	AT-003	<0.1	1	<0.1	<0.1	0	91	[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.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

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 (not SPOCAS); 60-140% for organics/SPOCAS (+/-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.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

TPH_A_ALI_AROUG/AIR_TO15/AIR_TO15_UG:

PQL has been raised due to the high level of analytes present in the sample 8.

4-ethyltoluene: PQL has been raised due to interference from analytes (other than those being tested) in the sample #3.

The TPH fractions are calibrated with non-halogenated and non-oxygenated hydrocarbons (aliphatics and aromatics). There are significantly different response factors for halogenated and non-halogenated hydrocarbons, and also oxygenated and non-oxygenated hydrocarbons, hence, there may be some notable differences between the TPH fraction result(s) and the sum of the individual halogenated and oxygenated analytes within said fraction. This typically occurs where high levels of halogenated hydrocarbon(s) and/or oxygenated hydrocarbon(s) dominate said fraction.

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	84822.03	**Suburb:**	Eastern Creek	**To:**	Envirolabs
Project Name:	Eastern Creek EIS	**Order Number**			12 Ashley Street, Chatswood
Project Manager:	Paul Gorman	**Sampler:**	JJH	**Attn:**	Daniel Ford
Emails:	joel.james-hall@douglaspartners.com.au paul.gorman@douglaspartners.com.au			**Phone:**	99106200
Date Required:	Standard ☐			**Email:**	AirToxSydney@envirolabservices.com.au
Prior Storage:	☐ Shelved	Do samples contain 'potential' HBM?	Yes ☐ No ☐	(If YES, then handle, transport and store in accordance with FPM HAZ	

Sample ID	Lab ID	Date Sampled	Tube / Can No	Analytes: Start Vac	Stop Vac	TO15 (VOC, BTEX), TRH	CH4, CO2, CO, O2, H2S	IPA	Hold	Flow rate (ml/min)	Sample duration (min)
BH208	1	26-Feb-20	1315 (3291)	-27	-7	X	X				
BH208	2	26-Feb-20	8076720445						X	113	5
BH2	3	26-Feb-20	1688	-28	-7	X	X				
BH2	4	26-Feb-20	8079720446						X	113	5
BH201	5	26-Feb-20	3533	-28	-7	X	X				
BH4	6	26-Feb-20	3642	-28.5	-7	X	X				
BH4	7	26-Feb-20	8076720449						X	113	5
BH213	8	26-Feb-20	2554	-27	-7	x	x				
BH213	9	26-Feb-20	8076720450						X	113	5
BD1	10	26-Feb-20	3509	-29	-3	x	x				
IPA QAQC	11	26-Feb-20	8076720451					X		113	0.5
BH204	12	26-Feb-20	3651	-28	-7	x	x				
BH204	13	26-Feb-20	8076720443						X	113	5
Purge Blank	14	26-Feb-20	8076720448						X	113	5
PQL (S) mg/kg											**ANZECC PQLs req'd for all water analy**

ENVIROLAB — Envirolab Services, 12 Ashley St, Chatswood NSW 2067, Ph: (02) 9910 6200
Job No: 237639
Date Received: 27/02/20
Time Received: 10:30
Received by: DP
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Lab Report/Reference No:

Metals to Analyse: 8HM unless specified here:

Total number of samples in container: **Relinquished by:** **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd **Address** **Phone:** **Fax:**

Signed: **Received by:** **Date & Time:**

Daniel Ford

From: Joel James-Hall <joel.james-hall@douglaspartners.com.au>
Sent: Thursday, 27 February 2020 12:20 PM
To: Daniel Ford; Dr Chris Guo
Cc: AirTox Sydney
Subject: RE: Sampling media order

Hi Daniel,

GC-FID is fine.

Thanks

Joel James-Hall | Environmental Engineer
Douglas Partners Pty Ltd | ABN 75 053 980 117 | www.douglaspartners.com.au
96 Hermitage Road West Ryde NSW 2114 | PO Box 472 West Ryde NSW 1685
P: 02 9809 0666 | E: joel.james-hall@douglaspartners.com.au

CLIENT CHOICE AWARDS
2020 FINALIST beaton nab

This email is confidential. If you are not the intended recipient, please notify us immediately and be aware that any disclosure, copying, distribution or use of the contents of this information is prohibited. Please note that the company does not make any commitment through emails not confirmed by fax or letter.

From: Daniel Ford <DFord@envirolab.com.au>
Sent: Thursday, 27 February 2020 12:13 PM
To: Joel James-Hall <joel.james-hall@douglaspartners.com.au>; Dr Chris Guo <CGuo@envirolab.com.au>
Cc: AirTox Sydney <AirToxSydney@envirolabservices.com.au>
Subject: RE: Sampling media order

Hi Joel,

I just wanted to clarify the testing requirements for H2S. We can report H2S from two different methods, as below. Which method of testing would you prefer to proceed with?

GC-FID: reporting limit of 0.1%, non NATA. Cost will be $120/ sample (that is the total for all fixed gases, CH4, CO2, CO and 02).
GC-SCD: reporting limit of 5ppbv, NATA. Cost will be $350/ sample (other fixed gases not included in the cost).

Kind Regards,

Daniel Ford | Technical Officer | Envirolab Services Pty Ltd

Great Science. Great Service.
12 Ashley Street Chatswood NSW 2067
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E dford@envirolab.com.au | **W** www.envirolab.com.au

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customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 237964

Client Details

Client	Douglas Partners Pty Ltd
Attention	Paul Gorman
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**84822.03, Eastern Creek**
Number of Samples	18 WATER
Date samples received	02/03/2020
Date completed instructions received	02/03/2020

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	09/03/2020
Date of Issue	09/03/2020

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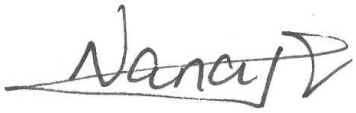
Results Approved By
Diego Bigolin, Team Leader, Inorganics
Jaimie Loa-Kum-Cheung, Metals Supervisor
Josh Williams, Senior Chemist
Loren Bardwell, Senior Chemist
Priya Samarawickrama, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

VOCs in water						
Our Reference	UNITS	237964-1	237964-2	237964-3	237964-4	237964-5
Your Reference		ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Dichlorodifluoromethane	µg/L	<10	<10	<10	<10	<10
Chloromethane	µg/L	<10	<10	<10	<10	<10
Vinyl Chloride	µg/L	<10	<10	<10	<10	<10
Bromomethane	µg/L	<10	<10	<10	<10	<10
Chloroethane	µg/L	<10	<10	<10	<10	<10
Trichlorofluoromethane	µg/L	<10	<10	<10	<10	<10
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
1,1-dichloroethane	µg/L	<1	<1	<1	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	2	1	<1	<1	<1
2,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
1,2-dichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-dichloropropene	µg/L	<1	<1	<1	<1	<1
Cyclohexane	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Benzene	µg/L	<1	<1	<1	<1	<1
Dibromomethane	µg/L	<1	<1	<1	<1	<1
1,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	1	<1	<1	<1	<1
trans-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
1,3-dichloropropane	µg/L	<1	<1	<1	<1	<1
Dibromochloromethane	µg/L	<1	<1	<1	<1	<1
1,2-dibromoethane	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1

VOCs in water						
Our Reference		237964-1	237964-2	237964-3	237964-4	237964-5
Your Reference	UNITS	ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Bromoform	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
Styrene	µg/L	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
o-xylene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichloropropane	µg/L	<1	<1	<1	<1	<1
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1
Bromobenzene	µg/L	<1	<1	<1	<1	<1
n-propyl benzene	µg/L	<1	<1	<1	<1	<1
2-chlorotoluene	µg/L	<1	<1	<1	<1	<1
4-chlorotoluene	µg/L	<1	<1	<1	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
Tert-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
Sec-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
4-isopropyl toluene	µg/L	<1	<1	<1	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
n-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	123	123	125	126	127
Surrogate toluene-d8	%	102	104	102	102	102
Surrogate 4-BFB	%	114	114	114	115	111

VOCs in water						
Our Reference		237964-6	237964-7	237964-8	237964-9	237964-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Dichlorodifluoromethane	µg/L	<10	<10	<10	<10	<10
Chloromethane	µg/L	<10	<10	<10	<10	<10
Vinyl Chloride	µg/L	<10	<10	<10	<10	<10
Bromomethane	µg/L	<10	<10	<10	<10	<10
Chloroethane	µg/L	<10	<10	<10	<10	<10
Trichlorofluoromethane	µg/L	<10	<10	<10	<10	<10
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
1,1-dichloroethane	µg/L	<1	<1	<1	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1
2,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
1,2-dichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-dichloropropene	µg/L	<1	<1	<1	<1	<1
Cyclohexane	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Benzene	µg/L	<1	<1	<1	<1	<1
Dibromomethane	µg/L	<1	<1	<1	<1	<1
1,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<1	<1	<1	<1	<1
trans-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
1,3-dichloropropane	µg/L	<1	<1	<1	<1	<1
Dibromochloromethane	µg/L	<1	<1	<1	<1	<1
1,2-dibromoethane	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1

VOCs in water						
Our Reference		237964-6	237964-7	237964-8	237964-9	237964-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Bromoform	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
Styrene	µg/L	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
o-xylene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichloropropane	µg/L	<1	<1	<1	<1	<1
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1
Bromobenzene	µg/L	<1	<1	<1	<1	<1
n-propyl benzene	µg/L	<1	<1	<1	<1	<1
2-chlorotoluene	µg/L	<1	<1	<1	<1	<1
4-chlorotoluene	µg/L	<1	<1	<1	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
Tert-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
Sec-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
4-isopropyl toluene	µg/L	<1	<1	<1	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
n-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	124	126	122	123	121
Surrogate toluene-d8	%	103	103	101	102	104
Surrogate 4-BFB	%	114	111	114	110	111

VOCs in water						
Our Reference		237964-11	237964-12	237964-13	237964-14	237964-15
Your Reference	UNITS	SW02	SW03	SW04	SW05	SW06
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Dichlorodifluoromethane	µg/L	<10	<10	<10	<10	<10
Chloromethane	µg/L	<10	<10	<10	<10	<10
Vinyl Chloride	µg/L	<10	<10	<10	<10	<10
Bromomethane	µg/L	<10	<10	<10	<10	<10
Chloroethane	µg/L	<10	<10	<10	<10	<10
Trichlorofluoromethane	µg/L	<10	<10	<10	<10	<10
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
1,1-dichloroethane	µg/L	<1	<1	<1	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1
2,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
1,2-dichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-dichloropropene	µg/L	<1	<1	<1	<1	<1
Cyclohexane	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Benzene	µg/L	<1	<1	<1	<1	<1
Dibromomethane	µg/L	<1	<1	<1	<1	<1
1,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<1	<1	<1	<1	<1
trans-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
1,3-dichloropropane	µg/L	<1	<1	<1	<1	<1
Dibromochloromethane	µg/L	<1	<1	<1	<1	<1
1,2-dibromoethane	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1

VOCs in water						
Our Reference		237964-11	237964-12	237964-13	237964-14	237964-15
Your Reference	UNITS	SW02	SW03	SW04	SW05	SW06
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Bromoform	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
Styrene	µg/L	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
o-xylene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichloropropane	µg/L	<1	<1	<1	<1	<1
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1
Bromobenzene	µg/L	<1	<1	<1	<1	<1
n-propyl benzene	µg/L	<1	<1	<1	<1	<1
2-chlorotoluene	µg/L	<1	<1	<1	<1	<1
4-chlorotoluene	µg/L	<1	<1	<1	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
Tert-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
Sec-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
4-isopropyl toluene	µg/L	<1	<1	<1	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
n-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	120	121	119	118	116
Surrogate toluene-d8	%	103	103	102	103	104
Surrogate 4-BFB	%	112	112	112	112	112

vTRH(C6-C10)/BTEXN in Water						
Our Reference		237964-1	237964-2	237964-3	237964-4	237964-5
Your Reference	UNITS	ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
TRH C_6 - C_9	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10}	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	123	123	125	126	127
Surrogate toluene-d8	%	102	104	102	102	102
Surrogate 4-BFB	%	114	114	114	115	111

vTRH(C6-C10)/BTEXN in Water						
Our Reference		237964-6	237964-7	237964-8	237964-9	237964-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
TRH C_6 - C_9	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10}	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	124	126	122	123	121
Surrogate toluene-d8	%	103	103	104	102	104
Surrogate 4-BFB	%	114	111	114	110	111

vTRH(C6-C10)/BTEXN in Water						
Our Reference		237964-11	237964-12	237964-13	237964-14	237964-15
Your Reference	UNITS	SW02	SW03	SW04	SW05	SW06
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
TRH C_6 - C_9	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10}	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	120	121	119	118	116
Surrogate toluene-d8	%	103	103	102	103	104
Surrogate 4-BFB	%	112	112	112	112	112

vTRH(C6-C10)/BTEXN in Water				
Our Reference		237964-16	237964-17	237964-18
Your Reference	UNITS	BD1/20200228	TRIP BLANK	TRIP SPIKE
Date Sampled		28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	03/03/2020	03/03/2020	03/03/2020
TRH C_6 - C_9	µg/L	<10	<10	[NA]
TRH C_6 - C_{10}	µg/L	<10	<10	[NA]
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	[NA]
Benzene	µg/L	<1	<1	105%
Toluene	µg/L	<1	<1	101%
Ethylbenzene	µg/L	<1	<1	95%
m+p-xylene	µg/L	<2	<2	91%
o-xylene	µg/L	<1	<1	96%
Naphthalene	µg/L	<1	<1	[NA]
Surrogate Dibromofluoromethane	%	125	109	97
Surrogate toluene-d8	%	103	101	107
Surrogate 4-BFB	%	111	112	104

svTRH (C10-C40) in Water						
Our Reference		237964-1	237964-2	237964-3	237964-4	237964-5
Your Reference	UNITS	ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
TRH C_{10} - C_{14}	µg/L	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100	<100	<100	<100
TRH >C_{10} - C_{16}	µg/L	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50	<50	<50	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100	<100	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	107	110	111	113	124

svTRH (C10-C40) in Water						
Our Reference		237964-6	237964-7	237964-8	237964-9	237964-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
TRH C_{10} - C_{14}	µg/L	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100	<100	<100	<100
TRH >C_{10} - C_{16}	µg/L	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50	<50	<50	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100	<100	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	103	105	96	106	104

svTRH (C10-C40) in Water						
Our Reference		237964-11	237964-12	237964-13	237964-14	237964-15
Your Reference	UNITS	SW02	SW03	SW04	SW05	SW06
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	04/03/2020
TRH C_{10} - C_{14}	µg/L	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100	<100	<100	<100
TRH >C_{10} - C_{16}	µg/L	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50	<50	<50	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100	<100	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	100	89	78	110	110

svTRH (C10-C40) in Water		
Our Reference		237964-16
Your Reference	UNITS	BD1/20200228
Date Sampled		28/02/2020
Type of sample		WATER
Date extracted	-	03/03/2020
Date analysed	-	04/03/2020
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	%	107

PAHs in Water - Low Level						
Our Reference		237964-1	237964-2	237964-3	237964-4	237964-5
Your Reference	UNITS	ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	04/03/2020	04/03/2020	04/03/2020	04/03/2020	04/03/2020
Naphthalene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d14	%	96	94	96	92	105

PAHs in Water - Low Level						
Our Reference		237964-6	237964-7	237964-8	237964-9	237964-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	04/03/2020	04/03/2020	04/03/2020	04/03/2020	04/03/2020
Naphthalene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d14	%	92	84	85	95	95

PAHs in Water - Low Level						
Our Reference	UNITS	237964-11	237964-12	237964-13	237964-14	237964-15
Your Reference		SW02	SW03	SW04	SW05	SW06
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	04/03/2020	04/03/2020	04/03/2020	04/03/2020	04/03/2020
Naphthalene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d14	%	98	80	72	93	94

PAHs in Water - Low Level		
Our Reference		237964-16
Your Reference	UNITS	BD1/20200228
Date Sampled		28/02/2020
Type of sample		WATER
Date extracted	-	03/03/2020
Date analysed	-	04/03/2020
Naphthalene	µg/L	<0.2
Acenaphthylene	µg/L	<0.1
Acenaphthene	µg/L	<0.1
Fluorene	µg/L	<0.1
Phenanthrene	µg/L	<0.1
Anthracene	µg/L	<0.1
Fluoranthene	µg/L	<0.1
Pyrene	µg/L	<0.1
Benzo(a)anthracene	µg/L	<0.1
Chrysene	µg/L	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2
Benzo(a)pyrene	µg/L	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5
Total +ve PAH's	µg/L	<0.1
Surrogate p-Terphenyl-d14	%	91

Organochlorine Pesticides in Water						
Our Reference		237964-1	237964-2	237964-3	237964-4	237964-5
Your Reference	UNITS	ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	04/03/2020	04/03/2020	04/03/2020	04/03/2020	04/03/2020
alpha-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
HCB	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
beta-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
gamma-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Heptachlor	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
delta-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Aldrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Heptachlor Epoxide	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
gamma-Chlordane	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
alpha-Chlordane	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan I	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDE	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Dieldrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan II	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDD	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin Aldehyde	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDT	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan Sulphate	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate TCMX	%	89	86	97	93	101

Organochlorine Pesticides in Water						
Our Reference		237964-6	237964-7	237964-8	237964-9	237964-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	04/03/2020	04/03/2020	04/03/2020	04/03/2020	04/03/2020
alpha-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
HCB	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
beta-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
gamma-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Heptachlor	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
delta-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Aldrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Heptachlor Epoxide	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
gamma-Chlordane	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
alpha-Chlordane	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan I	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDE	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Dieldrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan II	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDD	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin Aldehyde	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDT	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan Sulphate	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate TCMX	%	85	81	78	88	84

Organochlorine Pesticides in Water						
Our Reference		237964-11	237964-12	237964-13	237964-14	237964-15
Your Reference	UNITS	SW02	SW03	SW04	SW05	SW06
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	04/03/2020	04/03/2020	04/03/2020	04/03/2020	04/03/2020
alpha-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
HCB	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
beta-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
gamma-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Heptachlor	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
delta-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Aldrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Heptachlor Epoxide	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
gamma-Chlordane	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
alpha-Chlordane	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan I	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDE	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Dieldrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan II	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDD	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin Aldehyde	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDT	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan Sulphate	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate TCMX	%	89	72	64	82	80

OP Pesticides in Water						
Our Reference		237964-1	237964-2	237964-3	237964-4	237964-5
Your Reference	UNITS	ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	04/03/2020	04/03/2020	04/03/2020	04/03/2020	04/03/2020
Dichlorvos	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Diazinon	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyriphos-methyl	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Ronnel	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Fenitrothion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyriphos	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos ethyl	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Ethion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate TCMX	%	89	86	97	93	101

OP Pesticides in Water						
Our Reference		237964-6	237964-7	237964-8	237964-9	237964-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	04/03/2020	04/03/2020	04/03/2020	04/03/2020	04/03/2020
Dichlorvos	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Diazinon	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyriphos-methyl	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Ronnel	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Fenitrothion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyriphos	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos ethyl	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Ethion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate TCMX	%	85	81	78	88	84

OP Pesticides in Water						
Our Reference		237964-11	237964-12	237964-13	237964-14	237964-15
Your Reference	UNITS	SW02	SW03	SW04	SW05	SW06
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	04/03/2020	04/03/2020	04/03/2020	04/03/2020	04/03/2020
Dichlorvos	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Diazinon	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyriphos-methyl	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Ronnel	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Fenitrothion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyriphos	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos ethyl	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Ethion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate TCMX	%	89	72	64	82	80

PCBs in Water						
Our Reference		237964-1	237964-2	237964-3	237964-4	237964-5
Your Reference	UNITS	ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	04/03/2020	04/03/2020	04/03/2020	04/03/2020	04/03/2020
Aroclor 1016	µg/L	<2	<2	<2	<2	<2
Aroclor 1221	µg/L	<2	<2	<2	<2	<2
Aroclor 1232	µg/L	<2	<2	<2	<2	<2
Aroclor 1242	µg/L	<2	<2	<2	<2	<2
Aroclor 1248	µg/L	<2	<2	<2	<2	<2
Aroclor 1254	µg/L	<2	<2	<2	<2	<2
Aroclor 1260	µg/L	<2	<2	<2	<2	<2
Surrogate TCMX	%	89	86	97	93	101

PCBs in Water						
Our Reference		237964-6	237964-7	237964-8	237964-9	237964-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	04/03/2020	04/03/2020	04/03/2020	04/03/2020	04/03/2020
Aroclor 1016	µg/L	<2	<2	<2	<2	<2
Aroclor 1221	µg/L	<2	<2	<2	<2	<2
Aroclor 1232	µg/L	<2	<2	<2	<2	<2
Aroclor 1242	µg/L	<2	<2	<2	<2	<2
Aroclor 1248	µg/L	<2	<2	<2	<2	<2
Aroclor 1254	µg/L	<2	<2	<2	<2	<2
Aroclor 1260	µg/L	<2	<2	<2	<2	<2
Surrogate TCMX	%	85	81	78	88	84

PCBs in Water						
Our Reference		237964-11	237964-12	237964-13	237964-14	237964-15
Your Reference	UNITS	SW02	SW03	SW04	SW05	SW06
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	04/03/2020	04/03/2020	04/03/2020	04/03/2020	04/03/2020
Aroclor 1016	µg/L	<2	<2	<2	<2	<2
Aroclor 1221	µg/L	<2	<2	<2	<2	<2
Aroclor 1232	µg/L	<2	<2	<2	<2	<2
Aroclor 1242	µg/L	<2	<2	<2	<2	<2
Aroclor 1248	µg/L	<2	<2	<2	<2	<2
Aroclor 1254	µg/L	<2	<2	<2	<2	<2
Aroclor 1260	µg/L	<2	<2	<2	<2	<2
Surrogate TCMX	%	89	72	64	82	80

Total Phenolics in Water						
Our Reference		237964-1	237964-2	237964-3	237964-4	237964-5
Your Reference	UNITS	ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Total Phenolics (as Phenol)	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Total Phenolics in Water						
Our Reference		237964-6	237964-7	237964-8	237964-9	237964-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Total Phenolics (as Phenol)	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Total Phenolics in Water						
Our Reference		237964-11	237964-12	237964-13	237964-14	237964-15
Your Reference	UNITS	SW02	SW03	SW04	SW05	SW06
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Date analysed	-	03/03/2020	03/03/2020	03/03/2020	03/03/2020	03/03/2020
Total Phenolics (as Phenol)	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05

HM in water - dissolved						
Our Reference		237964-1	237964-2	237964-3	237964-4	237964-5
Your Reference	UNITS	ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date prepared	-	04/03/2020	04/03/2020	04/03/2020	04/03/2020	04/03/2020
Date analysed	-	04/03/2020	04/03/2020	04/03/2020	04/03/2020	04/03/2020
Arsenic-Dissolved	µg/L	1	2	<1	<1	1
Cadmium-Dissolved	µg/L	0.2	0.1	0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	<1	5	<1	<1	<1
Copper-Dissolved	µg/L	3	12	<1	16	<1
Lead-Dissolved	µg/L	<1	<1	<1	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel-Dissolved	µg/L	6	5	29	4	4
Zinc-Dissolved	µg/L	44	20	35	4	6
Manganese-Dissolved	µg/L	160	390	17,000	360	2,100

HM in water - dissolved						
Our Reference		237964-6	237964-7	237964-8	237964-9	237964-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date prepared	-	04/03/2020	04/03/2020	04/03/2020	04/03/2020	04/03/2020
Date analysed	-	04/03/2020	04/03/2020	04/03/2020	04/03/2020	04/03/2020
Arsenic-Dissolved	µg/L	2	2	<1	2	2
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	<1	4	<1	<1	<1
Copper-Dissolved	µg/L	2	<1	3	2	2
Lead-Dissolved	µg/L	<1	<1	<1	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel-Dissolved	µg/L	12	52	1	30	4
Zinc-Dissolved	µg/L	12	2	13	12	9
Manganese-Dissolved	µg/L	1,700	470	38	14,000	2,000

HM in water - dissolved						
Our Reference		237964-11	237964-12	237964-13	237964-14	237964-15
Your Reference	UNITS	SW02	SW03	SW04	SW05	SW06
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date prepared	-	04/03/2020	04/03/2020	04/03/2020	04/03/2020	04/03/2020
Date analysed	-	04/03/2020	04/03/2020	04/03/2020	04/03/2020	04/03/2020
Arsenic-Dissolved	µg/L	2	2	2	2	<1
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1	<0.1	0.1
Chromium-Dissolved	µg/L	<1	<1	<1	<1	<1
Copper-Dissolved	µg/L	5	4	5	3	56
Lead-Dissolved	µg/L	<1	<1	<1	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel-Dissolved	µg/L	2	5	2	2	4
Zinc-Dissolved	µg/L	15	6	10	7	1,500
Manganese-Dissolved	µg/L	450	1,900	360	650	310

HM in water - dissolved		
Our Reference		237964-16
Your Reference	UNITS	BD1/20200228
Date Sampled		28/02/2020
Type of sample		WATER
Date prepared	-	04/03/2020
Date analysed	-	04/03/2020
Arsenic-Dissolved	µg/L	2
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	4
Zinc-Dissolved	µg/L	5
Manganese-Dissolved	µg/L	1,900

Miscellaneous Inorganics						
Our Reference		237964-1	237964-2	237964-3	237964-4	237964-5
Your Reference	UNITS	ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date prepared	-	02/03/2020	02/03/2020	02/03/2020	02/03/2020	02/03/2020
Date analysed	-	02/03/2020	02/03/2020	02/03/2020	02/03/2020	02/03/2020
Total Cyanide	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004
Ammonia as N in water	mg/L	0.75	1.4	0.11	0.11	0.054
Chloride, Cl	mg/L	4,200	5,800	8,500	4,000	2,600
Sulphate, SO4	mg/L	570	650	810	440	820
Total Alkalinity as $CaCO_3$	mg/L	660	820	440	890	620

Miscellaneous Inorganics						
Our Reference		237964-6	237964-7	237964-8	237964-9	237964-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date prepared	-	02/03/2020	02/03/2020	02/03/2020	02/03/2020	02/03/2020
Date analysed	-	02/03/2020	02/03/2020	02/03/2020	02/03/2020	02/03/2020
Total Cyanide	mg/L	<0.004	<0.004	<0.004	<0.004	[NA]
Ammonia as N in water	mg/L	0.29	3.9	0.13	0.12	0.46
Total Nitrogen in water	mg/L	[NA]	[NA]	[NA]	[NA]	1.8
Chloride, Cl	mg/L	4,300	8,100	6,200	2,300	150
Sulphate, SO4	mg/L	460	370	530	670	22
Total Alkalinity as $CaCO_3$	mg/L	770	2,300	850	350	270
pH	pH Units	[NA]	[NA]	[NA]	[NA]	7.9
Electrical Conductivity	µS/cm	[NA]	[NA]	[NA]	[NA]	980
Dissolved Oxygen*	mg/L	[NA]	[NA]	[NA]	[NA]	7.1

Miscellaneous Inorganics						
Our Reference	UNITS	237964-11	237964-12	237964-13	237964-14	237964-15
Your Reference		SW02	SW03	SW04	SW05	SW06
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date prepared	-	02/03/2020	02/03/2020	02/03/2020	02/03/2020	02/03/2020
Date analysed	-	02/03/2020	02/03/2020	02/03/2020	02/03/2020	02/03/2020
Ammonia as N in water	mg/L	0.30	0.20	0.21	0.091	0.40
Total Nitrogen in water	mg/L	2.5	10	2.4	1.4	170
Chloride, Cl	mg/L	48	190	44	51	88
Sulphate, SO4	mg/L	24	49	23	22	42
Total Alkalinity as $CaCO_3$	mg/L	110	260	110	130	61
pH	pH Units	7.5	7.8	7.6	7.4	7.3
Electrical Conductivity	µS/cm	420	1,200	420	460	1,600
Dissolved Oxygen*	mg/L	7.0	7.0	6.6	7.2	7.2

Metals in Waters - Acid extractable						
Our Reference		237964-10	237964-11	237964-12	237964-13	237964-14
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date prepared	-	04/03/2020	04/03/2020	04/03/2020	04/03/2020	04/03/2020
Date analysed	-	04/03/2020	04/03/2020	04/03/2020	04/03/2020	04/03/2020
Phosphorus - Total	mg/L	0.2	0.4	0.2	0.3	0.4

Metals in Waters - Acid extractable		
Our Reference		237964-15
Your Reference	UNITS	SW06
Date Sampled		28/02/2020
Type of sample		WATER
Date prepared	-	04/03/2020
Date analysed	-	04/03/2020
Phosphorus - Total	mg/L	0.4

Method ID	Methodology Summary
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25°C in accordance with APHA latest edition 2510 and Rayment & Lyons.
Inorg-006	Alkalinity - determined titrimetrically in accordance with APHA latest edition, 2320-B.
Inorg-014	Cyanide - free, total, weak acid dissociable by segmented flow analyser (in line dialysis with colourimetric finish). Solids/Filters and sorbents are extracted in a caustic media prior to analysis. Impingers are pH adjsuted as required prior to analysis. Cyanides amenable to Chlorination - samples are analysed untreated and treated with hyperchlorite to assess the potential for chlorination of cyanide forms. Based on APHA latest edition, 4500-CN_G,H.
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-055/062/127	Total Nitrogen - Calculation sum of TKN and oxidised Nitrogen. Alternatively analysed by combustion and chemiluminescence.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a KCl extraction.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
Inorg-112	Dissolved Oxygen using membrane electrode. Note this analysis should ideally be carried out immediately after sampling.
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-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-012/017	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS.
Org-012/017	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/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.

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.

QUALITY CONTROL: VOCs in water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			03/03/2020	1	03/03/2020	04/03/2020		03/03/2020	[NT]
Date analysed	-			03/03/2020	1	03/03/2020	04/03/2020		03/03/2020	[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	101	[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	2	2	0	100	[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	100	[NT]
1,1,1-trichloroethane	µg/L	1	Org-013	<1	1	<1	<1	0	99	[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	101	[NT]
Bromodichloromethane	µg/L	1	Org-013	<1	1	1	<1	0	99	[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	103	[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]

QUALITY CONTROL: VOCs in water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
o-xylene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[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	113	1	123	113	8	108	[NT]
Surrogate toluene-d8	%		Org-013	101	1	102	101	1	105	[NT]
Surrogate 4-BFB	%		Org-013	110	1	114	106	7	116	[NT]

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	03/03/2020	04/03/2020		[NT]	[NT]
Date analysed	-			[NT]	11	03/03/2020	04/03/2020		[NT]	[NT]
Dichlorodifluoromethane	µg/L	10	Org-013	[NT]	11	<10	<10	0	[NT]	[NT]
Chloromethane	µg/L	10	Org-013	[NT]	11	<10	<10	0	[NT]	[NT]
Vinyl Chloride	µg/L	10	Org-013	[NT]	11	<10	<10	0	[NT]	[NT]
Bromomethane	µg/L	10	Org-013	[NT]	11	<10	<10	0	[NT]	[NT]
Chloroethane	µg/L	10	Org-013	[NT]	11	<10	<10	0	[NT]	[NT]
Trichlorofluoromethane	µg/L	10	Org-013	[NT]	11	<10	<10	0	[NT]	[NT]
1,1-Dichloroethene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Trans-1,2-dichloroethene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
1,1-dichloroethane	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Cis-1,2-dichloroethene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Bromochloromethane	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Chloroform	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
2,2-dichloropropane	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
1,2-dichloroethane	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
1,1,1-trichloroethane	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
1,1-dichloropropene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Cyclohexane	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Carbon tetrachloride	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Benzene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Dibromomethane	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
1,2-dichloropropane	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Trichloroethene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Bromodichloromethane	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
trans-1,3-dichloropropene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
cis-1,3-dichloropropene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
1,1,2-trichloroethane	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Toluene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
1,3-dichloropropane	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Dibromochloromethane	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
1,2-dibromoethane	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Tetrachloroethene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
1,1,1,2-tetrachloroethane	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Chlorobenzene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Ethylbenzene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Bromoform	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
m+p-xylene	µg/L	2	Org-013	[NT]	11	<2	<2	0	[NT]	[NT]
Styrene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
1,1,2,2-tetrachloroethane	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
o-xylene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
1,2,3-trichloropropane	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Isopropylbenzene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Bromobenzene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
n-propyl benzene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
2-chlorotoluene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
4-chlorotoluene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
1,3,5-trimethyl benzene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Tert-butyl benzene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
1,2,4-trimethyl benzene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
1,3-dichlorobenzene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Sec-butyl benzene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
1,4-dichlorobenzene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
4-isopropyl toluene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
1,2-dichlorobenzene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
n-butyl benzene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
1,2-dibromo-3-chloropropane	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
1,2,4-trichlorobenzene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Hexachlorobutadiene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
1,2,3-trichlorobenzene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-013	[NT]	11	120	115	4	[NT]	[NT]
Surrogate toluene-d8	%		Org-013	[NT]	11	103	100	3	[NT]	[NT]
Surrogate 4-BFB	%		Org-013	[NT]	11	112	102	9	[NT]	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			03/03/2020	1	03/03/2020	04/03/2020		03/03/2020	[NT]
Date analysed	-			03/03/2020	1	03/03/2020	04/03/2020		03/03/2020	[NT]
TRH C_6 - C_9	µg/L	10	Org-016	<10	1	<10	<10	0	110	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-016	<10	1	<10	<10	0	110	[NT]
Benzene	µg/L	1	Org-016	<1	1	<1	<1	0	97	[NT]
Toluene	µg/L	1	Org-016	<1	1	<1	<1	0	112	[NT]
Ethylbenzene	µg/L	1	Org-016	<1	1	<1	<1	0	111	[NT]
m+p-xylene	µg/L	2	Org-016	<2	1	<2	<2	0	114	[NT]
o-xylene	µg/L	1	Org-016	<1	1	<1	<1	0	111	[NT]
Naphthalene	µg/L	1	Org-013	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-016	113	1	123	113	8	108	[NT]
Surrogate toluene-d8	%		Org-016	101	1	102	101	1	105	[NT]
Surrogate 4-BFB	%		Org-016	110	1	114	106	7	116	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	03/03/2020	04/03/2020		[NT]	[NT]
Date analysed	-			[NT]	11	03/03/2020	04/03/2020		[NT]	[NT]
TRH C_6 - C_9	µg/L	10	Org-016	[NT]	11	<10	<10	0	[NT]	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-016	[NT]	11	<10	<10	0	[NT]	[NT]
Benzene	µg/L	1	Org-016	[NT]	11	<1	<1	0	[NT]	[NT]
Toluene	µg/L	1	Org-016	[NT]	11	<1	<1	0	[NT]	[NT]
Ethylbenzene	µg/L	1	Org-016	[NT]	11	<1	<1	0	[NT]	[NT]
m+p-xylene	µg/L	2	Org-016	[NT]	11	<2	<2	0	[NT]	[NT]
o-xylene	µg/L	1	Org-016	[NT]	11	<1	<1	0	[NT]	[NT]
Naphthalene	µg/L	1	Org-013	[NT]	11	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-016	[NT]	11	120	115	4	[NT]	[NT]
Surrogate toluene-d8	%		Org-016	[NT]	11	103	100	3	[NT]	[NT]
Surrogate 4-BFB	%		Org-016	[NT]	11	112	102	9	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	237964-2
Date extracted	-			03/03/2020	1	03/03/2020	03/03/2020		03/03/2020	03/03/2020
Date analysed	-			04/03/2020	1	03/03/2020	03/03/2020		03/03/2020	03/03/2020
TRH C_{10} - C_{14}	µg/L	50	Org-003	<50	1	<50	<50	0	103	121
TRH C_{15} - C_{28}	µg/L	100	Org-003	<100	1	<100	<100	0	95	107
TRH C_{29} - C_{36}	µg/L	100	Org-003	<100	1	<100	<100	0	103	128
TRH >C_{10} - C_{16}	µg/L	50	Org-003	<50	1	<50	<50	0	103	121
TRH >C_{16} - C_{34}	µg/L	100	Org-003	<100	1	<100	<100	0	95	107
TRH >C_{34} - C_{40}	µg/L	100	Org-003	<100	1	<100	<100	0	103	128
Surrogate o-Terphenyl	%		Org-003	111	1	107	115	7	128	110

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	03/03/2020	03/03/2020		[NT]	[NT]
Date analysed	-			[NT]	11	03/03/2020	03/03/2020		[NT]	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-003	[NT]	11	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-003	[NT]	11	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-003	[NT]	11	<100	<100	0	[NT]	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-003	[NT]	11	<50	<50	0	[NT]	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-003	[NT]	11	<100	<100	0	[NT]	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-003	[NT]	11	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-003	[NT]	11	100	85	16	[NT]	[NT]

QUALITY CONTROL: PAHs in Water - Low Level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	237964-2
Date extracted	-			03/03/2020	1	03/03/2020	03/03/2020		03/03/2020	03/03/2020
Date analysed	-			04/03/2020	1	04/03/2020	04/03/2020		04/03/2020	04/03/2020
Naphthalene	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	112	114
Acenaphthylene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluorene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	94	104
Phenanthrene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	94	98
Anthracene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	92	96
Pyrene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	80	82
Benzo(a)anthracene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	104	114
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	68	72
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	99	1	96	96	0	84	84

QUALITY CONTROL: PAHs in Water - Low Level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	03/03/2020	03/03/2020		[NT]	[NT]
Date analysed	-			[NT]	11	04/03/2020	04/03/2020		[NT]	[NT]
Naphthalene	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Acenaphthylene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Fluorene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Anthracene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Pyrene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Chrysene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	[NT]	11	98	78	23	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	237964-2
Date extracted	-			03/03/2020	1	03/03/2020	03/03/2020		03/03/2020	03/03/2020
Date analysed	-			04/03/2020	1	04/03/2020	04/03/2020		04/03/2020	04/03/2020
alpha-BHC	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	80	88
HCB	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
beta-BHC	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	74	86
gamma-BHC	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Heptachlor	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	92	92
delta-BHC	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Aldrin	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	92	102
Heptachlor Epoxide	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	78	82
gamma-Chlordane	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
alpha-Chlordane	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Endosulfan I	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
pp-DDE	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	88	88
Dieldrin	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	86	96
Endrin	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	94	106
Endosulfan II	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
pp-DDD	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	80	80
Endrin Aldehyde	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
pp-DDT	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Endosulfan Sulphate	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	94	96
Methoxychlor	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	85	1	89	88	1	79	86

QUALITY CONTROL: Organochlorine Pesticides in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	03/03/2020	03/03/2020		[NT]	[NT]
Date analysed	-			[NT]	11	04/03/2020	04/03/2020		[NT]	[NT]
alpha-BHC	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
HCB	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
beta-BHC	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
gamma-BHC	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Heptachlor	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
delta-BHC	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Aldrin	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Heptachlor Epoxide	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
gamma-Chlordane	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
alpha-Chlordane	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Endosulfan I	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
pp-DDE	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Dieldrin	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Endrin	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Endosulfan II	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
pp-DDD	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Endrin Aldehyde	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
pp-DDT	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Endosulfan Sulphate	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Methoxychlor	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	11	89	69	25	[NT]	[NT]

QUALITY CONTROL: OP Pesticides in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	237964-2
Date extracted	-			03/03/2020	1	03/03/2020	03/03/2020		03/03/2020	03/03/2020
Date analysed	-			04/03/2020	1	04/03/2020	04/03/2020		04/03/2020	04/03/2020
Dichlorvos	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	108	122
Dimethoate	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Diazinon	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Chlorpyriphos-methyl	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Ronnel	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	92	94
Fenitrothion	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	82	84
Malathion	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	85	88
Chlorpyriphos	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	90	86
Parathion	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	98	104
Bromophos ethyl	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Ethion	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	90	88
Azinphos-methyl (Guthion)	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	85	1	89	88	1	79	86

QUALITY CONTROL: OP Pesticides in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	03/03/2020	03/03/2020		[NT]	[NT]
Date analysed	-			[NT]	11	04/03/2020	04/03/2020		[NT]	[NT]
Dichlorvos	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Dimethoate	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Diazinon	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Chlorpyriphos-methyl	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Ronnel	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Fenitrothion	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Malathion	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Chlorpyriphos	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Parathion	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Bromophos ethyl	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Ethion	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Azinphos-methyl (Guthion)	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	11	89	69	25	[NT]	[NT]

QUALITY CONTROL: PCBs in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	237964-2
Date extracted	-			03/03/2020	1	03/03/2020	03/03/2020		03/03/2020	03/03/2020
Date analysed	-			04/03/2020	1	04/03/2020	04/03/2020		04/03/2020	04/03/2020
Aroclor 1016	µg/L	2	Org-006	<2	1	<2	<2	0	[NT]	[NT]
Aroclor 1221	µg/L	2	Org-006	<2	1	<2	<2	0	[NT]	[NT]
Aroclor 1232	µg/L	2	Org-006	<2	1	<2	<2	0	[NT]	[NT]
Aroclor 1242	µg/L	2	Org-006	<2	1	<2	<2	0	[NT]	[NT]
Aroclor 1248	µg/L	2	Org-006	<2	1	<2	<2	0	[NT]	[NT]
Aroclor 1254	µg/L	2	Org-006	<2	1	<2	<2	0	115	136
Aroclor 1260	µg/L	2	Org-006	<2	1	<2	<2	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	85	1	89	88	1	79	86

QUALITY CONTROL: PCBs in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	03/03/2020	03/03/2020		[NT]	[NT]
Date analysed	-			[NT]	11	04/03/2020	04/03/2020		[NT]	[NT]
Aroclor 1016	µg/L	2	Org-006	[NT]	11	<2	<2	0	[NT]	[NT]
Aroclor 1221	µg/L	2	Org-006	[NT]	11	<2	<2	0	[NT]	[NT]
Aroclor 1232	µg/L	2	Org-006	[NT]	11	<2	<2	0	[NT]	[NT]
Aroclor 1242	µg/L	2	Org-006	[NT]	11	<2	<2	0	[NT]	[NT]
Aroclor 1248	µg/L	2	Org-006	[NT]	11	<2	<2	0	[NT]	[NT]
Aroclor 1254	µg/L	2	Org-006	[NT]	11	<2	<2	0	[NT]	[NT]
Aroclor 1260	µg/L	2	Org-006	[NT]	11	<2	<2	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	[NT]	11	89	69	25	[NT]	[NT]

QUALITY CONTROL: Total Phenolics in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	237964-2
Date extracted	-			03/03/2020	1	03/03/2020	03/03/2020		03/03/2020	03/03/2020
Date analysed	-			03/03/2020	1	03/03/2020	03/03/2020		03/03/2020	03/03/2020
Total Phenolics (as Phenol)	mg/L	0.05	Inorg-031	<0.05	1	<0.05	<0.05	0	102	97

QUALITY CONTROL: Total Phenolics in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	03/03/2020	03/03/2020		[NT]	[NT]
Date analysed	-			[NT]	11	03/03/2020	03/03/2020		[NT]	[NT]
Total Phenolics (as Phenol)	mg/L	0.05	Inorg-031	[NT]	11	<0.05	<0.05	0	[NT]	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	237964-2
Date prepared	-			04/03/2020	1	04/03/2020	04/03/2020		04/03/2020	04/03/2020
Date analysed	-			04/03/2020	1	04/03/2020	04/03/2020		04/03/2020	04/03/2020
Arsenic-Dissolved	µg/L	1	Metals-022	<1	1	1	1	0	101	104
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	1	0.2	0.2	0	95	99
Chromium-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	103	101
Copper-Dissolved	µg/L	1	Metals-022	<1	1	3	3	0	102	90
Lead-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	107	89
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	1	<0.05	<0.05	0	99	94
Nickel-Dissolved	µg/L	1	Metals-022	<1	1	6	6	0	102	92
Zinc-Dissolved	µg/L	1	Metals-022	<1	1	44	43	2	97	90
Manganese-Dissolved	µg/L	5	Metals-022	<5	1	160	150	6	96	#

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	11	04/03/2020	04/03/2020		[NT]	[NT]
Date analysed	-			[NT]	11	04/03/2020	04/03/2020		[NT]	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	[NT]	11	2	2	0	[NT]	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	[NT]	11	<1	<1	0	[NT]	[NT]
Copper-Dissolved	µg/L	1	Metals-022	[NT]	11	5	5	0	[NT]	[NT]
Lead-Dissolved	µg/L	1	Metals-022	[NT]	11	<1	<1	0	[NT]	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	[NT]	11	<0.05	<0.05	0	[NT]	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	[NT]	11	2	2	0	[NT]	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	[NT]	11	15	13	14	[NT]	[NT]
Manganese-Dissolved	µg/L	5	Metals-022	[NT]	11	450	430	5	[NT]	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	237964-2
Date prepared	-			02/03/2020	1	02/03/2020	02/03/2020		02/03/2020	02/03/2020
Date analysed	-			02/03/2020	1	02/03/2020	02/03/2020		02/03/2020	02/03/2020
Total Cyanide	mg/L	0.004	Inorg-014	<0.004	1	<0.004	<0.004	0	105	107
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	1	0.75	0.76	1	103	[NT]
Total Nitrogen in water	mg/L	0.1	Inorg-055/062/127	<0.1	11	2.5	2.5	0	88	[NT]
Chloride, Cl	mg/L	1	Inorg-081	<1	1	4200	4400	5	100	[NT]
Sulphate, SO4	mg/L	1	Inorg-081	<1	1	570	590	3	99	[NT]
Total Alkalinity as $CaCO_3$	mg/L	5	Inorg-006	<5	1	660	670	2	115	[NT]
pH	pH Units		Inorg-001	[NT]	11	7.5	7.6	1	102	[NT]
Electrical Conductivity	µS/cm	1	Inorg-002	<1	11	420	420	0	102	[NT]
Dissolved Oxygen*	mg/L	0.1	Inorg-112	<0.1	11	7.0	[NT]		[NT]	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	237964-12
Date prepared	-			[NT]	11	02/03/2020	02/03/2020		[NT]	02/03/2020
Date analysed	-			[NT]	11	02/03/2020	02/03/2020		[NT]	02/03/2020
Ammonia as N in water	mg/L	0.005	Inorg-057	[NT]	11	0.30	0.30	0	[NT]	83
Chloride, Cl	mg/L	1	Inorg-081	[NT]	11	48	47	2	[NT]	70
Sulphate, SO4	mg/L	1	Inorg-081	[NT]	11	24	23	4	[NT]	87
Total Alkalinity as $CaCO_3$	mg/L	5	Inorg-006	[NT]	11	110	110	0	[NT]	[NT]

QUALITY CONTROL: Metals in Waters - Acid extractable					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			04/03/2020	[NT]	[NT]	[NT]	[NT]	04/03/2020	[NT]
Date analysed	-			04/03/2020	[NT]	[NT]	[NT]	[NT]	04/03/2020	[NT]
Phosphorus - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	86	[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.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

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 (not SPOCAS); 60-140% for organics/SPOCAS (+/-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.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

8 HM in water - dissolved - # Percent recovery is not possible to report due to the high concentration of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

Total metals: no preserved sample was received, therefore analysis was conducted from the unpreserved sample bottle. Note: there is a possibility some elements may be underestimated.

Tests/Analytes PH have exceeded the recommended technical holding times, Envirolab Group form 347 "Recommended Preservation and Holding Times" can be provided on request (available on the Envirolab website)

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No: 84822.03	**Suburb:** Eastern Creek	**To:**	Envirolab Services
Project Name:	**Order Number**		
Project Manager: PG	**Sampler:** JJH/AMS	**Attn:**	Aileen Hie
Emails: paul.gorman@douglaspartners.com.au; joel.james-hall@douglaspartners.com.au		**Phone:**	(02) 9910 6200
Date Required: Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☒		**Email:**	AHie@envirolab.com.au
Prior Storage: ☒ Esky ☒ Fridge ☐ Shelved	Do samples contain 'potential' HBM? Yes ☐ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)		

Sample ID	Lab ID	Date Sampled	Sample Type (S - soil W - water)	Container Type (G - glass P - plastic)	Analytes: Combo 8L	Combo 10L	VOC	Ammonia	Anions	TRH/ BTEX	Combo 3L			Notes/preservation
ABH01	1	28/02/20	W	G,P		×	×	×	×					
ABH02	2	28/02/20	W	G,P		×	×	×	×					
ABH03	3	28/02/20	W	G,P		×	×	×	×					
BH2	4	28/02/20	W	G,P		×	×	×	×					
BH4	5	28/02/20	W	G,P		×	×	×	×					
BH201	6	28/02/20	W	G,P		×	×	×	×					
BH204	7	28/02/20	W	G,P		×	×	×	×					
BH208	8	28/02/20	W	G,P		×	×	×	×					
BH213	9	28/02/20	W	G,P		×	×	×	×					
SW01	10	28/02/20	W	G,P	×		×	×	×					
SW02	11	28/02/20	W	G,P	×		×	×	×					
SW03	12	28/02/20	W	G,P	×		×	×	×					
SW04	13	28/02/20	W	G,P	×		×	×	×					
SW05	14	28/02/20	W	G,P	×		×	×	×					
SW06	15	28/02/20	W	G,P	×		×	×	×					
PQL (S) mg/kg														

+ TN, TP_LOW
pH, EC, DO

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 227964
Date Received: 2/3/20
Time Received: 16:40
Received by:
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

↳ BH208 vial x1

ANZECC PQLs req'd for all water analytes ☐

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Lab Report/Reference No:

Metals to Analyse: 8HM unless specified here: Add manganese

Total number of samples in container: 16 **Relinquished by:** AMS **Transported to laboratory by:** Courier

Send Results to: Douglas Partners Pty Ltd **Address** 96 Hermitage Road West Ryde NSW 2114 **Phone:** **Fax:**

Signed: **Received by:** **Date & Time:** 02-03-20

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No: 84822.03	**Suburb:** Eastern Creek	**To:**	Envirolab Services
Project Name:	**Order Number**		
Project Manager: PG	**Sampler:** JJH/AMS	**Attn:**	Aileen Hie
Emails: paul.gorman@douglaspartners.com.au; joel.james-hall@douglaspartners.com.au		**Phone:**	(02) 9910 6200
Date Required: Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☐		**Email:**	AHie@envirolab.com.au

Prior Storage: ☐ Esky ☐ Fridge ☐ Shelved Do samples contain 'potential' HBM? Yes ☐ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)

Sample ID	Lab ID	Sampling Date	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: Combo 8L	VOC	VOC	Ammonia	Anions	TRH/ BTEX	Combo 3L			Notes/preservation
BD1/20200228	16	28/02/20	W	G,P							×			
Trip Blank	17		W							×				
Trip Spike	18		W							×				
PQL (S) mg/kg														**ANZECC PQLs req'd for all water analytes** ☐

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here: Add manganese

Lab Report/Reference No:

Total number of samples in container: **Relinquished by:** AMS **Transported to laboratory by:** Courier

Send Results to: Douglas Partners Pty Ltd **Address** 96 Hermitage Road West Ryde NSW 2114 **Phone:** **Fax:**

Signed: **Received by:** **Date & Time:** 02.03.20

237964.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2004699**	Page	: 1 of 6
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR PAUL GORMAN	Contact	: Customer Services ES
Address	: PO BOX 472 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 1685	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 07 32378900	Telephone	: +61-2-8784 8555
Project	: 84822.03 Green Waratah	Date Samples Received	: 11-Feb-2020 17:30
Order number	: ----	Date Analysis Commenced	: 12-Feb-2020
C-O-C number	: ----	Issue Date	: 18-Feb-2020 14:44
Sampler	: ----		
Site	: Eastern Creek		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

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) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BD1/20200204	----	----	----	----
			Client sampling date / time	04-Feb-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2004699-001	--------	--------	--------	--------
				Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**15.2**	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**10**	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	**15**	----	----	----	----
Copper	7440-50-8	5	mg/kg	**24**	----	----	----	----
Lead	7439-92-1	5	mg/kg	**36**	----	----	----	----
Nickel	7440-02-0	2	mg/kg	**12**	----	----	----	----
Zinc	7440-66-6	5	mg/kg	**77**	----	----	----	----
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	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BD1/20200204	----	----	----	----
				Client sampling date / time	04-Feb-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2004699-001	--------	--------	--------	--------
					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	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	----	----
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	----	----	----	----
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**89.7**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**91.0**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**75.5**	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**100**	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		**88.0**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		**97.6**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**88.8**	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		**93.0**	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BD1/20200204	----	----	----	----
				Client sampling date / time	04-Feb-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2004699-001	--------	--------	--------	--------
					Result	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%		**84.2**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
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

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2004699**

Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR PAUL GORMAN	Contact	: Customer Services ES
Address	: PO BOX 472 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 1685	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: paul.gorman@douglaspartners.com.au	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: +61 07 32378900	Telephone	: +61-2-8784 8555
Facsimile	: +61 07 32378999	Facsimile	: +61-2-8784 8500
Project	: 84822.03 Green Waratah	Page	: 1 of 3
Order number	: ----	Quote number	: EM2017DOUPAR0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Eastern Creek		
Sampler	:		

Dates

Date Samples Received	: 11-Feb-2020 17:30	Issue Date	: 12-Feb-2020
Client Requested Due Date	: 19-Feb-2020	Scheduled Reporting Date	: **19-Feb-2020**

Delivery Details

Mode of Delivery	: Undefined	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 11.7 - Ice Bricks present
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
- **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.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- 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 ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

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

Summary of Sample(s) and Requested Analysis

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

Matrix: **SOIL**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	SOIL - EA055-103 Moisture Content	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES2004699-001	04-Feb-2020 00:00	BD1/20200204	✓	✓

Proactive Holding Time Report

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

Requested Deliverables

ACCOUNTS BRISBANE

- A4 - AU Tax Invoice (INV)	Email	brisbane@douglaspartners.com.au

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	accounts@douglaspartners.com.au

Joel James-Hall

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

PAUL GORMAN

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

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	84822.03	**Suburb:** Eastern Creek	**To:** EnviroLab
Project Name:	Green Waratah	**Order Number**	12 Ashley Street, Chatswood 2067
Project Manager:	Paul Gorman	**Sampler:** SJH	**Attn:** Aileen Hie
Emails:	joel.james-hall@douglaspartners.com.au; paul.gorman@douglaspartners.com		**Phone:** (02) 9910 6200
Date Required:	Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☑		**Email:** Ahie@envirolab.com.au
Prior Storage:	☑ Esky ☑ Fridge ☐ Shelved	Do samples contain 'potential' HBM? Yes ☑	No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)

Sample ID	Lab ID	Date Sampled	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: Combo 8	Combo 3	FA & AF	pH, CEC	BTEX	TRH	Asbestos ID		Notes/preservation
TP01/0.1-0.5	1	04/02/20	S	G/P	x		x						
TP02/0-0.3	2	04/02/20	S	G/P		x	x	x					
TP03/0-0.4	3	04/02/20	S	G/P	x		x						
TP14/A1	4	04/02/20	Material	P							x		
TP04/0-0.4	5	04/02/20	S	G/P		x	x	x					
TP04/A1	6	04/02/20	Material	P							x		
TP05/0-0.3	7	04/02/20	S	G/P		x	x						
TP06/0-0.3	8	03/02/20	S	G/P		x	x						
TP07/0.3-0.8	9	03/02/20	S	G/P	x		x						
TP07/A1	10	03/02/20	Material	P							x		
TP08/0-0.5	11	03/02/20	S	G/P	x		x	x					
TP08/2-2.5	12	03/02/20	S	G/P		x	x						
TP08/A1	13	03/02/20	Material	P							x		
TP09/1.5-2.0	14	03/02/20	S	G/P	x		x						
TP09/3.0-3.5	15	03/02/20	S	G/P		x	x						
PQL (S) mg/kg													

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

ANZECC PQLs req'd for all water analytes ☐

Metals to Analyse: 8HM unless specified here: 8HM plus Manganese

Total number of samples in container:

Relinquished by:

Transported to laboratory by:

Send Results to: Douglas Partners Pty Ltd

Address

Phone: **Fax:**

Signed:

Received by: S. Bolton SB

Date & Time: 10/02/20 1408

Received by: AS 11/2/20 17:30

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 226351

Date Received: 10/02/20
Time Received: 1408
Received by: SB
Temp: Cool/Ambient
Cooling: Ice/Icepack

Environmental Division
Sydney
Work Order Reference
ES2004699

Telephone : +61-2-8784 8555

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	84822.03	**Suburb:**	Eastern Creek	**To:**	EnviroLab
Project Name:	Green Waratah	**Order Number**			12 Ashley Street, Chatswood 2067
Project Manager:	Paul Gorman	**Sampler:**		**Attn:**	Aileen Hie
Emails:	joel.james-hall@douglaspartners.com.au; paul.gorman@douglaspartners.com			**Phone:**	(02) 9910 6200
Date Required:	Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☐			**Email:**	Ahie@envirolab.com.au
Prior Storage:	☐ Esky ☐ Fridge ☐ Shelved	Do samples contain 'potential' HBM?	Yes ☐ No ☐	(If YES, then handle, transport and store in accordance with FPM HAZID)	

Sample ID	Lab ID	Date Sampled	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: Combo 8	Combo 3	FA & AF	pH, CEC	BTEX	TRH	Asbestos ID			Notes/preservation
TP09/A2	16	03/02/20	Material	P							x			
TP10/0-0.5	17	03/02/20	S	P			x							
TP10/A1	18	03/02/20	Material	P							x			
TP11/1-1.5	19	03/02/20	S	G/P		x	x							
TP11/1.8-2.0	20	03/02/20	S	G		x								
TP11/1.7-2.1	21	03/02/20	S	P			x							
TP12/0-0.5	22	03/02/20	S	G/P	x		x							
TP12/2-2.5	23	03/02/20	S	G/P		x	x							
TP13/-0.5	24	03/02/20	S	P			x							
TP14/0-0.5	25	03/02/20	S	G/P			x							
TP14/0.6-1.6	26	03/02/20	S	P			x							
TP14/1.5-1.7	27	03/02/20	S	G		x								
TP14/A2	28	03/02/20	Material	P							x			
TP15/1.5-1.7	29	03/02/20	S	G	x									
TP15/1.5-2.0	30	03/02/20	S	P			x							
PQL (S) mg/kg														**ANZECC PQLs req'd for all water analytes** ☐

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Lab Report/Reference No: 236381

Total number of samples in container:	**Relinquished by:**	**Transported to laboratory by:**	
Send Results to: Douglas Partners Pty Ltd	**Address**	**Phone:**	**Fax:**
Signed:	**Received by:** S. Bolton	**Date & Time:** 10/02/20	1405

Received by: AJ 11/2/20 17:30

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	84822.03	**Suburb:**	Eastern Creek	**To:**	EnviroLab
Project Name:	Green Waratah	**Order Number**			12 Ashley Street, Chatswood 2067
Project Manager:	Paul Gorman	**Sampler:**		**Attn:**	Aileen Hie
Emails:	joel.james-hall@douglaspartners.com.au; paul.gorman@douglaspartners.con			**Phone:**	(02) 9910 6200
Date Required:	Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☐			**Email:**	Ahie@envirolab.com.au

Prior Storage: ☐ Esky ☐ Fridge ☐ Shelved Do samples contain 'potential' HBM? Yes ☐ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)

Sample ID	Lab ID	Sampling Date	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: Combo 8	Combo 3	FA & AF	pH, CEC	BTEX	TRH	Asbestos ID			Notes/preservation
TP15/3.5-3.7	31	03/02/20	S	G		x								
TP15/2.5-3.0	32	03/02/20	S	P			x							
Trip Spike	33	03/02/20	S	G					x					
Trip Blank	34	03/02/20	S	G					x	x				
BD2/20200203	35	03/02/20	S	G		x								Intra-lab replicate
~~BD1/20200204~~	~~—~~	~~04/02/20~~	~~S~~	~~G~~		~~x~~								~~Inter-lab replicate~~
TP14/0-02	36	3/2/20	S	G	x	extra recvd.								
PQL (S) mg/kg														

ANZECC PQLs req'd for all water analytes ☐

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Lab Report/Reference No: 236381

Total number of samples in container: **Relinquished by:** **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd **Address:** **Phone:** **Fax:**

Signed: **Received by:** S. Bolton SBol **Date & Time:** 10/02/20 1408

Reling'd 11/2/2020 ELS. syd Prey

Received by: AJ 11/2/20 1730

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1930220**	Page	: 1 of 6
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: JACK SNOWDEN	Contact	: Shirley LeCornu
Address	: PO BOX 472 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 1685	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +6138549 9630
Project	: 84822.02 - Green Waratah	Date Samples Received	: 18-Sep-2019 18:39
Order number	: ----	Date Analysis Commenced	: 19-Sep-2019
C-O-C number	: ----	Issue Date	: 23-Sep-2019 10:54
Sampler	: JS		
Site	: Eastern Creek		
Quote number	: EN/222		
No. of samples received	: 3		
No. of samples analysed	: 3		

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*
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	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) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- 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: 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
- 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	BD2/20190916	BD4/20190916	BD2A/20190916	----	----
			Client sampling date / time	16-Sep-2019 00:00	16-Sep-2019 00:00	16-Sep-2019 00:00	----	----
Compound	CAS Number	LOR	Unit	ES1930220-001	ES1930220-002	ES1930220-003	--------	--------
				Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	14.0	17.0	19.3	----	----
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	21.9	30.8	39.9	----	----
APPROVED IDENTIFIER:	----	-	--	C.OWLER	C.OWLER	C.OWLER	----	----
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	No	----	----
Organic Fibre	----	0.1	g/kg	No	No	No	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	11	12	6	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	21	14	21	----	----
Copper	7440-50-8	5	mg/kg	19	28	26	----	----
Lead	7439-92-1	5	mg/kg	20	34	17	----	----
Nickel	7440-02-0	2	mg/kg	13	5	10	----	----
Zinc	7440-66-6	5	mg/kg	455	50	42	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
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	BD2/20190916	BD4/20190916	BD2A/20190916	----	----
				Client sampling date / time	16-Sep-2019 00:00	16-Sep-2019 00:00	16-Sep-2019 00:00	----	----
Compound	CAS Number	LOR	Unit		ES1930220-001	ES1930220-002	ES1930220-003	--------	--------
					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	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**77.5**	**77.6**	**72.1**	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**85.0**	**83.9**	**82.2**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BD2/20190916	BD4/20190916	BD2A/20190916	----	----
				Client sampling date / time	16-Sep-2019 00:00	16-Sep-2019 00:00	16-Sep-2019 00:00	----	----
Compound	CAS Number	LOR	Unit		ES1930220-001	ES1930220-002	ES1930220-003	--------	--------
					Result	Result	Result	----	----
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	0.5	%		**63.7**	**59.9**	**57.0**	**----**	**----**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**100**	**100**	**98.6**	**----**	**----**
Anthracene-d10	1719-06-8	0.5	%		**87.6**	**88.5**	**86.4**	**----**	**----**
4-Terphenyl-d14	1718-51-0	0.5	%		**95.6**	**96.3**	**94.9**	**----**	**----**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**116**	**108**	**106**	**----**	**----**
Toluene-D8	2037-26-5	0.2	%		**114**	**102**	**100**	**----**	**----**
4-Bromofluorobenzene	460-00-4	0.2	%		**95.7**	**88.0**	**86.3**	**----**	**----**

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	BD2/20190916 - 16-Sep-2019 00:00	Mid brown soil.
EA200: Description	BD4/20190916 - 16-Sep-2019 00:00	Mid brown soil.
EA200: Description	BD2A/20190916 - 16-Sep-2019 00:00	Mid brown soil.

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	Recovery Limits (%) High
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

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES1930220**	Page	: 1 of 6
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: JACK SNOWDEN	Contact	: Shirley LeCornu
Address	: PO BOX 472 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 1685	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +6138549 9630
Project	: 84822.02 - Green Waratah	Date Samples Received	: 18-Sep-2019
Order number	: ----	Date Analysis Commenced	: 19-Sep-2019
C-O-C number	: ----	Issue Date	: 23-Sep-2019
Sampler	: JS		
Site	: Eastern Creek		
Quote number	: EN/222		
No. of samples received	: 3		
No. of samples analysed	: 3		

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
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	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 (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 2593685)									
ES1930331-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	15	13	15.0	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	9	48.5	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	8	8	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	6	7	0.00	No Limit
EW1904009-017	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	29	29	0.00	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	5	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	22	20	12.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	12	11	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	17	15	7.90	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2593688)									
ES1930028-001	Anonymous	EA055: Moisture Content	----	0.1	%	7.5	7.5	0.00	No Limit
ES1930331-008	Anonymous	EA055: Moisture Content	----	0.1	%	15.8	15.6	1.49	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2593684)									
ES1929771-056	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.1	0.00	No Limit
ES1929870-022	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2596918)									
ES1930220-001	BD2/20190916	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

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: 2596918) - continued									
ES1930220-001	BD2/20190916	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: 2592394)									
ES1930220-001	BD2/20190916	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2596916)									
ES1930220-001	BD2/20190916	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 Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2592394)									
ES1930220-001	BD2/20190916	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: 2596916)									
ES1930220-001	BD2/20190916	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: BTEXN (QC Lot: 2592394)									
ES1930220-001	BD2/20190916	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

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
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2593685)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	105	86.0	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	102	83.0	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	95.7	76.0	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	102	86.0	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	101	80.0	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	104	87.0	123
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	112	80.0	122
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2593684)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	78.7	70.0	105
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2596918)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	102	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	109	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	102	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	106	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	102	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	103	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	111	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	108	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	97.1	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	94.7	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	88.4	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	97.6	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	103	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	87.4	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	81.2	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	85.5	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2592394)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	90.1	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2596916)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	86.6	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	104	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	100	71.0	129
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2592394)								

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2592394) - continued								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	83.8	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2596916)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	95.9	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	103	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	92.4	63.0	131
EP080: BTEXN (QCLot: 2592394)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	89.4	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	83.8	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	95.5	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	78.5	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	84.3	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	100	63.0	119

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
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2593685)							
ES1930331-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	97.8	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.5	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	93.2	70.0	130
		EG005T: Copper	7440-50-8	250 mg/kg	98.5	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	98.4	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	100.0	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	101	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2593684)							
ES1929771-056	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	89.1	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2596918)							
ES1930220-001	BD2/20190916	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	92.7	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	104	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2592394)							
ES1930220-001	BD2/20190916	EP080: C6 - C9 Fraction	----	32.5 mg/kg	103	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2596916)							

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: 2596916) - continued							
ES1930220-001	BD2/20190916	EP071: C10 - C14 Fraction	----	523 mg/kg	95.2	73.0	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	112	53.0	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	111	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2592394)							
ES1930220-001	BD2/20190916	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	92.6	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2596916)							
ES1930220-001	BD2/20190916	EP071: >C10 - C16 Fraction	----	860 mg/kg	101	73.0	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	116	53.0	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	103	52.0	132
EP080: BTEXN (QCLot: 2592394)							
ES1930220-001	BD2/20190916	EP080: Benzene	71-43-2	2.5 mg/kg	80.0	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	89.0	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	86.7	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	88.2	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	95.6	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	82.6	70.0	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES1930220**

Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: JACK SNOWDEN	Contact	: Shirley LeCornu
Address	: PO BOX 472 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 1685	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: jack.snowden@douglaspartners.com.au	E-mail	: shirley.lecornu@Alsglobal.com
Telephone	: ----	Telephone	: +6138549 9630
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: 84822.02 - Green Waratah	Page	: 1 of 3
Order number	: ----	Quote number	: EM2017DOUPAR0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Eastern Creek		
Sampler	: JS		

Dates

Date Samples Received	: 18-Sep-2019 18:39	Issue Date	: 18-Sep-2019
Client Requested Due Date	: 20-Sep-2019	Scheduled Reporting Date	: **20-Sep-2019**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 8.9'C - Ice Bricks present
Receipt Detail	: FOAM ESKY	No. of samples received / analysed	: 3 / 3

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 note that the scheduled reporting date has not been confirmed with laboratory management due to the late arrival of the samples. If the scheduled reporting date is not achievable ALS will be in contact with you.
- **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 ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

Method Client sample ID	Sample Container Received	Preferred Sample Container for Analysis
Asbestos Identification in Soils : EA200		
BD2/20190916	- Snap Lock Bag - Subsampled by ALS	- Snap Lock Bag - ACM/Asbestos Grab Bag
BD4/20190916	- Snap Lock Bag - Subsampled by ALS	- Snap Lock Bag - ACM/Asbestos Grab Bag
BD2A/20190916	- Snap Lock Bag - Subsampled by ALS	- Snap Lock Bag - ACM/Asbestos Grab Bag

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 - EA055-103 Moisture Content	SOIL - EA200G Asbestos Identification in Soils -	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES1930220-001	16-Sep-2019 00:00	BD2/20190916	✓	✓	✓
ES1930220-002	16-Sep-2019 00:00	BD4/20190916	✓	✓	✓
ES1930220-003	16-Sep-2019 00:00	BD2A/20190916	✓	✓	✓

Proactive Holding Time Report

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

Requested Deliverables

ACCOUNTS BRISBANE

- A4 - AU Tax Invoice (INV)	Email	brisbane@douglaspartners.com.au

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	accounts@douglaspartners.com.au

JACK SNOWDEN

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

Joel James-Hall

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

PAUL GORMAN

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

ES193 0220

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	84822.02	**Suburb:**	Eastern Creek	**To:**	Lab name
Project Name:	Green Waratah	**Order Number**			
Project Manager:	JS	**Sampler:**	JS	**Attn:**	
Emails:	el.james-hall;jack.snowden@douglaspartners.com.	paul.gorman@douglaspartners.com.au		**Phone:**	Subcon / ~~Forward Lab / Split WO~~
Date Required:	24 hr TAT			**Email:**	Lab / Analysis: Aclabs
Prior Storage:	☐ Eski	Do samples contain 'potential' HBM?	Yes ☐	No ☐	(If YES, ~~then handle, transport and store in accordance with FPM HAZID~~) Organised By / Date:

Sample ID	Lab ID	Sampling Date	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: combo 8a	combo 3a	OCP/OPP/PCB	VOC	Ph & cec	Ammonia				Notes/preservation
BH220 0.4-0.5	31	16/09/19	S	G	X		X	X		X				
BH221 0.4-0.5	32	16/09/19	S	G		X								
BH222 0.0-0.1	33	16/09/19	S	G	X					X				
BH223 0.1-0.2	34	16/09/19	S	G	X			X		X				
BH224 0.3-0.4	35	16/09/19	S	G		X								
BH225 0.1-0.2	36	16/09/19	S	G		X			X					
(1) BD2/20190916	—	16/09/19	S	G		X								SEND TO ALS
BD1A/20190916	37	16/09/19	S	G		X								
BD3/20190916	38	16/09/19	S	G		X								
(2) BD4/20190916	—	16/09/19	S	G		X								SEND TO ALS
(3) BD2A/20190916	—	16/09/19	S	G		X								SEND TO ALS
BD1/20190916	39	16/09/19	S	G		X								
BH14 0.3-0.4	40	16/09/19	S	G		X								
PQL (S) mg/kg														**ANZECC PQLs req'd for all water analytes** ☐

Relinquished By / Date:
Connote / Courier:
WO No:
Attached By PO / Internal Sheet:

TAT

Environmental Division Sydney
Work Order Reference
ES1930220
Telephone : +61-2-8784 8555

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Lab Report/Reference No: 226390

Metals to Analyse: 8HM unless specified here:

Total number of samples in container: | **Relinquished by:** | **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd | **Address** | **Phone:** | **Fax:**

Signed: | **Received by:** S Bolton SB | **Date & Time:** 18/09/19 1325

Relin'shed by: ELS Sycl. S. Bolton SB 18/09/19 14:08

Rec: Sydney 18/9/19 1810 SB

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES1930220**	Page	: 1 of 5
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: JACK SNOWDEN	Telephone	: +6138549 9630
Project	: 84822.02 - Green Waratah	Date Samples Received	: 18-Sep-2019
Site	: Eastern Creek	Issue Date	: 23-Sep-2019
Sampler	: JS	No. of samples received	: 3
Order number	: ----	No. of samples analysed	: 3

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: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
BD2/20190916, BD4/20190916, BD2A/20190916	**16-Sep-2019**	**----**	----	----	**19-Sep-2019**	30-Sep-2019	✓
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - Subsampled by ALS (EA200)							
BD2/20190916, BD4/20190916, BD2A/20190916	**16-Sep-2019**	**----**	----	----	**20-Sep-2019**	14-Mar-2020	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
BD2/20190916, BD4/20190916, BD2A/20190916	**16-Sep-2019**	**19-Sep-2019**	14-Mar-2020	✓	**19-Sep-2019**	14-Mar-2020	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
BD2/20190916, BD4/20190916, BD2A/20190916	**16-Sep-2019**	**19-Sep-2019**	14-Oct-2019	✓	**20-Sep-2019**	14-Oct-2019	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
BD2/20190916, BD4/20190916, BD2A/20190916	**16-Sep-2019**	**19-Sep-2019**	30-Sep-2019	✓	**20-Sep-2019**	29-Oct-2019	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
BD2/20190916, BD4/20190916, BD2A/20190916	**16-Sep-2019**	**19-Sep-2019**	30-Sep-2019	✓	**20-Sep-2019**	30-Sep-2019	✓
Soil Glass Jar - Unpreserved (EP071)							
BD2/20190916, BD4/20190916, BD2A/20190916	**16-Sep-2019**	**19-Sep-2019**	30-Sep-2019	✓	**23-Sep-2019**	29-Oct-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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP080)								
BD2/20190916, BD2A/20190916	BD4/20190916,	**16-Sep-2019**	**19-Sep-2019**	30-Sep-2019	✓	**20-Sep-2019**	30-Sep-2019	✓
Soil Glass Jar - Unpreserved (EP071)								
BD2/20190916, BD2A/20190916	BD4/20190916,	**16-Sep-2019**	**19-Sep-2019**	30-Sep-2019	✓	**23-Sep-2019**	29-Oct-2019	✓
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080)								
BD2/20190916, BD2A/20190916	BD4/20190916,	**16-Sep-2019**	**19-Sep-2019**	30-Sep-2019	✓	**20-Sep-2019**	30-Sep-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*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	3	**33.33**	**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-AES	EG005T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	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-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	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-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	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-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (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
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)
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.
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.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)
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.

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CERTIFICATE OF ANALYSIS 226863

Client Details

Client	Douglas Partners Pty Ltd
Attention	Joel Hall
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**84822.02, Eastern Creek**
Number of Samples	9 Water
Date samples received	24/09/2019
Date completed instructions received	24/09/2019

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	25/09/2019
Date of Issue	25/09/2019

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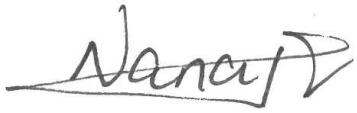
Results Approved By
Diego Bigolin, Team Leader, Inorganics
Jaimie Loa-Kum-Cheung, Metals Supervisor
Nick Sarlamis, Inorganics Supervisor
Steven Luong, Organics Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

VOCs in water						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Dichlorodifluoromethane	µg/L	<10	<10	<10	<10	<10
Chloromethane	µg/L	<10	<10	<10	<10	<10
Vinyl Chloride	µg/L	<10	<10	<10	<10	<10
Bromomethane	µg/L	<10	<10	<10	<10	<10
Chloroethane	µg/L	<10	<10	<10	<10	<10
Trichlorofluoromethane	µg/L	<10	<10	<10	<10	<10
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
1,1-dichloroethane	µg/L	<1	<1	<1	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1
2,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
1,2-dichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-dichloropropene	µg/L	<1	<1	<1	<1	<1
Cyclohexane	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Benzene	µg/L	<1	<1	<1	<1	<1
Dibromomethane	µg/L	<1	<1	<1	<1	<1
1,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<1	<1	<1	<1	<1
trans-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
1,3-dichloropropane	µg/L	<1	<1	<1	<1	<1
Dibromochloromethane	µg/L	<1	<1	<1	<1	<1
1,2-dibromoethane	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1

VOCs in water						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Bromoform	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
Styrene	µg/L	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
o-xylene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichloropropane	µg/L	<1	<1	<1	<1	<1
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1
Bromobenzene	µg/L	<1	<1	<1	<1	<1
n-propyl benzene	µg/L	<1	<1	<1	<1	<1
2-chlorotoluene	µg/L	<1	<1	<1	<1	<1
4-chlorotoluene	µg/L	<1	<1	<1	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
Tert-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
Sec-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
4-isopropyl toluene	µg/L	<1	<1	<1	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
n-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	105	114	113	115	108
Surrogate toluene-d8	%	92	100	99	100	98
Surrogate 4-BFB	%	108	117	114	114	114

VOCs in water			
Our Reference		226863-6	226863-7
Your Reference	UNITS	BH208	BD1/20190924
Date Sampled		24/09/2019	24/09/2019
Type of sample		Water	Water
Date extracted	-	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019
Dichlorodifluoromethane	µg/L	<10	<10
Chloromethane	µg/L	<10	<10
Vinyl Chloride	µg/L	<10	<10
Bromomethane	µg/L	<10	<10
Chloroethane	µg/L	<10	<10
Trichlorofluoromethane	µg/L	<10	<10
1,1-Dichloroethene	µg/L	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1
1,1-dichloroethane	µg/L	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1
Bromochloromethane	µg/L	<1	<1
Chloroform	µg/L	<1	<1
2,2-dichloropropane	µg/L	<1	<1
1,2-dichloroethane	µg/L	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1
1,1-dichloropropene	µg/L	<1	<1
Cyclohexane	µg/L	<1	<1
Carbon tetrachloride	µg/L	<1	<1
Benzene	µg/L	<1	<1
Dibromomethane	µg/L	<1	<1
1,2-dichloropropane	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Bromodichloromethane	µg/L	<1	<1
trans-1,3-dichloropropene	µg/L	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1
Toluene	µg/L	<1	<1
1,3-dichloropropane	µg/L	<1	<1
Dibromochloromethane	µg/L	<1	<1
1,2-dibromoethane	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1
Chlorobenzene	µg/L	<1	<1
Ethylbenzene	µg/L	<1	<1

VOCs in water			
Our Reference	UNITS	226863-6	226863-7
Your Reference		BH208	BD1/20190924
Date Sampled		24/09/2019	24/09/2019
Type of sample		Water	Water
Bromoform	µg/L	<1	<1
m+p-xylene	µg/L	<2	<2
Styrene	µg/L	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1
o-xylene	µg/L	<1	<1
1,2,3-trichloropropane	µg/L	<1	<1
Isopropylbenzene	µg/L	<1	<1
Bromobenzene	µg/L	<1	<1
n-propyl benzene	µg/L	<1	<1
2-chlorotoluene	µg/L	<1	<1
4-chlorotoluene	µg/L	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1
Tert-butyl benzene	µg/L	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1
Sec-butyl benzene	µg/L	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1
4-isopropyl toluene	µg/L	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1
n-butyl benzene	µg/L	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1
Hexachlorobutadiene	µg/L	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1
Surrogate Dibromofluoromethane	%	117	109
Surrogate toluene-d8	%	98	98
Surrogate 4-BFB	%	116	116

vTRH(C6-C10)/BTEXN in Water						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
TRH C_6 - C_9	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10}	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	105	114	113	115	108
Surrogate toluene-d8	%	92	100	99	100	98
Surrogate 4-BFB	%	108	117	114	114	114

vTRH(C6-C10)/BTEXN in Water				
Our Reference		226863-6	226863-8	226863-9
Your Reference	UNITS	BH208	Trip Spike	Trip Blank
Date Sampled		24/09/2019	24/09/2019	24/09/2019
Type of sample		Water	Water	Water
Date extracted	-	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019
TRH C_6 - C_9	µg/L	<10	[NA]	[NA]
TRH C_6 - C_{10}	µg/L	<10	[NA]	[NA]
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	[NA]	[NA]
Benzene	µg/L	<1	117%	<1
Toluene	µg/L	<1	102%	<1
Ethylbenzene	µg/L	<1	105%	<1
m+p-xylene	µg/L	<2	110%	<2
o-xylene	µg/L	<1	104%	<1
Naphthalene	µg/L	<1	[NA]	[NA]
Surrogate Dibromofluoromethane	%	117	107	106
Surrogate toluene-d8	%	98	101	98
Surrogate 4-BFB	%	116	111	116

svTRH (C10-C40) in Water						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
TRH C_{10} - C_{14}	µg/L	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100	<100	<100	<100
TRH >C_{10} - C_{16}	µg/L	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50	<50	<50	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100	<100	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	99	113	122	103	103

svTRH (C10-C40) in Water		
Our Reference		226863-6
Your Reference	UNITS	BH208
Date Sampled		24/09/2019
Type of sample		Water
Date extracted	-	25/09/2019
Date analysed	-	25/09/2019
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	%	92

PAHs in Water - Low Level						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Naphthalene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	93	91	95	105	97

PAHs in Water - Low Level		
Our Reference		226863-6
Your Reference	UNITS	BH208
Date Sampled		24/09/2019
Type of sample		Water
Date extracted	-	25/09/2019
Date analysed	-	25/09/2019
Naphthalene	µg/L	<0.2
Acenaphthylene	µg/L	<0.1
Acenaphthene	µg/L	<0.1
Fluorene	µg/L	<0.1
Phenanthrene	µg/L	<0.1
Anthracene	µg/L	<0.1
Fluoranthene	µg/L	<0.1
Pyrene	µg/L	<0.1
Benzo(a)anthracene	µg/L	<0.1
Chrysene	µg/L	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2
Benzo(a)pyrene	µg/L	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	97

OCP in water - low level						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
HCB	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
alpha-BHC	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
gamma-BHC	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
beta-BHC	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
delta-BHC	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Aldrin	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor Epoxide	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
gamma-Chlordane	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
alpha-Chlordane	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Endosulfan I	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
pp-DDE	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Dieldrin	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Endrin	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
pp-DDD	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Endosulfan II	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
DDT	µg/L	<0.006	<0.006	<0.006	<0.006	<0.006
Endrin Aldehyde	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Endosulfan Sulphate	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Methoxychlor	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Surrogate TCMX	%	70	78	83	83	74

OCP in water - low level		
Our Reference		226863-6
Your Reference	UNITS	BH208
Date Sampled		24/09/2019
Type of sample		Water
Date extracted	-	25/09/2019
Date analysed	-	25/09/2019
HCB	µg/L	<0.01
alpha-BHC	µg/L	<0.01
gamma-BHC	µg/L	<0.01
beta-BHC	µg/L	<0.01
Heptachlor	µg/L	<0.01
delta-BHC	µg/L	<0.01
Aldrin	µg/L	<0.01
Heptachlor Epoxide	µg/L	<0.01
gamma-Chlordane	µg/L	<0.01
alpha-Chlordane	µg/L	<0.01
Endosulfan I	µg/L	<0.01
pp-DDE	µg/L	<0.01
Dieldrin	µg/L	<0.01
Endrin	µg/L	<0.01
pp-DDD	µg/L	<0.01
Endosulfan II	µg/L	<0.01
DDT	µg/L	<0.006
Endrin Aldehyde	µg/L	<0.01
Endosulfan Sulphate	µg/L	<0.01
Methoxychlor	µg/L	<0.01
Surrogate TCMX	%	70

PCBs in Water - Low Level						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Aroclor 1016	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	70	78	83	83	74

PCBs in Water - Low Level		
Our Reference		226863-6
Your Reference	UNITS	BH208
Date Sampled		24/09/2019
Type of sample		Water
Date extracted	-	25/09/2019
Date analysed	-	25/09/2019
Aroclor 1016	µg/L	<0.1
Aroclor 1221	µg/L	<0.1
Aroclor 1232	µg/L	<0.1
Aroclor 1242	µg/L	<0.1
Aroclor 1248	µg/L	<0.1
Aroclor 1254	µg/L	<0.1
Aroclor 1260	µg/L	<0.1
Surrogate TCMX	%	70

Total Phenolics in Water						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Total Phenolics (as Phenol)	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Total Phenolics in Water		
Our Reference		226863-6
Your Reference	UNITS	BH208
Date Sampled		24/09/2019
Type of sample		Water
Date extracted	-	25/09/2019
Date analysed	-	25/09/2019
Total Phenolics (as Phenol)	mg/L	<0.05

HM in water - dissolved						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Arsenic-Dissolved	µg/L	1	<1	<1	<1	3
Cadmium-Dissolved	µg/L	0.2	0.1	0.2	<0.1	0.4
Chromium-Dissolved	µg/L	<1	<1	<1	2	1
Copper-Dissolved	µg/L	7	2	3	<1	7
Lead-Dissolved	µg/L	<1	<1	<1	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel-Dissolved	µg/L	2	6	10	27	11
Zinc-Dissolved	µg/L	12	6	22	3	59

HM in water - dissolved			
Our Reference		226863-6	226863-7
Your Reference	UNITS	BH208	BD1/20190924
Date Sampled		24/09/2019	24/09/2019
Type of sample		Water	Water
Date prepared	-	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019
Arsenic-Dissolved	µg/L	3	2
Cadmium-Dissolved	µg/L	0.2	0.2
Chromium-Dissolved	µg/L	<1	<1
Copper-Dissolved	µg/L	9	9
Lead-Dissolved	µg/L	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05
Nickel-Dissolved	µg/L	6	5
Zinc-Dissolved	µg/L	23	21

Cations in water Dissolved						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Date digested	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Calcium - Dissolved	mg/L	200	61	51	150	320
Magnesium - Dissolved	mg/L	200	290	490	650	290
Hardness	mgCaCO 3 /L	1,300	1,300	2,200	3,100	2,000

Cations in water Dissolved		
Our Reference		226863-6
Your Reference	UNITS	BH208
Date Sampled		24/09/2019
Type of sample		Water
Date digested	-	25/09/2019
Date analysed	-	25/09/2019
Calcium - Dissolved	mg/L	190
Magnesium - Dissolved	mg/L	690
Hardness	mgCaCO 3 /L	3,300

Miscellaneous Inorganics						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	24/09/2019	24/09/2019	24/09/2019	24/09/2019	24/09/2019
Date analysed	-	24/09/2019	24/09/2019	24/09/2019	24/09/2019	24/09/2019
Ammonia as N in water	mg/L	0.033	0.25	0.75	1.3	1.7
Total Cyanide	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004
Chloride, Cl	mg/L	2,000	4,700	4,600	5,200	25,000
Sulphate, SO4	mg/L	780	510	660	2,400	11,000
Nitrite as N in water	mg/L	<0.005	0.008	0.038	<0.005	0.051
Nitrate as N in water	mg/L	0.02	0.19	1.2	<0.005	0.40
Phosphate as P in water	mg/L	0.007	0.082	0.016	<0.005	<0.005

Miscellaneous Inorganics		
Our Reference		226863-6
Your Reference	UNITS	BH208
Date Sampled		24/09/2019
Type of sample		Water
Date prepared	-	24/09/2019
Date analysed	-	24/09/2019
Ammonia as N in water	mg/L	0.47
Total Cyanide	mg/L	<0.004
Chloride, Cl	mg/L	7,200
Sulphate, SO4	mg/L	530
Nitrite as N in water	mg/L	0.097
Nitrate as N in water	mg/L	370
Phosphate as P in water	mg/L	<0.005

Method ID	Methodology Summary
Inorg-014	Cyanide - free, total, weak acid dissociable by segmented flow analyser (in line dialysis with colourimetric finish). Solids/Filters and sorbents are extracted in a caustic media prior to analysis. Impingers are pH adjsuted as required prior to analysis. Cyanides amenable to Chlorination - samples are analysed untreated and treated with hyperchlorite to assess the potential for chlorination of cyanide forms. Based on APHA latest edition, 4500-CN_G,H.
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	Nitrate - determined colourimetrically. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-055	Nitrite - determined colourimetrically based on APHA latest edition NO2- B. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a KCl extraction.
Inorg-060	Phosphate determined colourimetrically based on EPA365.1 and APHA latest edition 4500 P E. Waters samples are filtered on receipt prior to analysis. 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. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
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-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.

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
Date analysed	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
Dichlorodifluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Vinyl Chloride	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromomethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichlorofluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-Dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trans-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	121	[NT]
Cis-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroform	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
2,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
1,1,1-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	110	[NT]
1,1-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Cyclohexane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Carbon tetrachloride	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibromomethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	118	[NT]
Bromodichloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
trans-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
cis-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	94	[NT]
1,2-dibromoethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Tetrachloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
1,1,1,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromoform	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
m+p-xylene	µg/L	2	Org-013	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Styrene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
o-xylene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Isopropylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-propyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3,5-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Tert-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Sec-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,4-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-isopropyl toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dibromo-3-chloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Hexachlorobutadiene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-013	106	[NT]	[NT]	[NT]	[NT]	105	[NT]
Surrogate toluene-d8	%		Org-013	99	[NT]	[NT]	[NT]	[NT]	102	[NT]
Surrogate 4-BFB	%		Org-013	112	[NT]	[NT]	[NT]	[NT]	106	[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	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
Date analysed	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
TRH C_6 - C_9	µg/L	10	Org-016	<10	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-016	<10	[NT]	[NT]	[NT]	[NT]	114	[NT]
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	117	[NT]
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	114	[NT]
m+p-xylene	µg/L	2	Org-016	<2	[NT]	[NT]	[NT]	[NT]	115	[NT]
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Naphthalene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-016	106	[NT]	[NT]	[NT]	[NT]	105	[NT]
Surrogate toluene-d8	%		Org-016	99	[NT]	[NT]	[NT]	[NT]	102	[NT]
Surrogate 4-BFB	%		Org-016	112	[NT]	[NT]	[NT]	[NT]	106	[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	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
Date analysed	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	108	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	94	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	113	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	108	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	94	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	113	[NT]
Surrogate o-Terphenyl	%		Org-003	109	[NT]	[NT]	[NT]	[NT]	118	[NT]

QUALITY CONTROL: PAHs in Water - Low Level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
Date analysed	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
Naphthalene	µg/L	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	120	[NT]
Acenaphthylene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Phenanthrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	109	[NT]	[NT]	[NT]	[NT]	109	[NT]

QUALITY CONTROL: OCP in water - low level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
Date analysed	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
HCB	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-BHC	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	98	[NT]
gamma-BHC	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	101	[NT]
Heptachlor	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	71	[NT]
delta-BHC	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	109	[NT]
Heptachlor Epoxide	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	116	[NT]
gamma-Chlordane	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-Chlordane	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	115	[NT]
Dieldrin	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	70	[NT]
Endrin	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	108	[NT]
pp-DDD	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	115	[NT]
Endosulfan II	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
DDT	µg/L	0.006	Org-005	<0.006	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endrin Aldehyde	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	70	[NT]
Methoxychlor	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-005	85	[NT]	[NT]	[NT]	[NT]	94	[NT]

QUALITY CONTROL: PCBs in Water - Low Level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
Date analysed	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
Aroclor 1016	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	72	[NT]
Aroclor 1254	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1260	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-006	85	[NT]	[NT]	[NT]	[NT]	88	[NT]

QUALITY CONTROL: Total Phenolics in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	226863-2
Date extracted	-			25/09/2019	1	25/09/2019	25/09/2019		25/09/2019	25/09/2019
Date analysed	-			25/09/2019	1	25/09/2019	25/09/2019		25/09/2019	25/09/2019
Total Phenolics (as Phenol)	mg/L	0.05	Inorg-031	<0.05	1	<0.05	<0.05	0	103	97

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	226863-2
Date prepared	-			25/09/2019	1	25/09/2019	25/09/2019		25/09/2019	25/09/2019
Date analysed	-			25/09/2019	1	25/09/2019	25/09/2019		25/09/2019	25/09/2019
Arsenic-Dissolved	µg/L	1	Metals-022	<1	1	1	1	0	100	104
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	1	0.2	0.2	0	103	96
Chromium-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	100	95
Copper-Dissolved	µg/L	1	Metals-022	<1	1	7	7	0	108	85
Lead-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	105	90
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	1	<0.05	<0.05	0	103	86
Nickel-Dissolved	µg/L	1	Metals-022	<1	1	2	2	0	101	87
Zinc-Dissolved	µg/L	1	Metals-022	<1	1	12	13	8	100	92

QUALITY CONTROL: Cations in water Dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	226863-2
Date digested	-			25/09/2019	1	25/09/2019	25/09/2019		25/09/2019	25/09/2019
Date analysed	-			25/09/2019	1	25/09/2019	25/09/2019		25/09/2019	25/09/2019
Calcium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	200	210	5	99	#
Magnesium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	200	200	0	97	#
Hardness	mgCaCO 3 /L	3		[NT]	1	1300	1400	7	[NT]	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	226863-2
Date prepared	-			24/09/2019	1	24/09/2019	24/09/2019		24/09/2019	24/09/2019
Date analysed	-			24/09/2019	1	24/09/2019	24/09/2019		24/09/2019	24/09/2019
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	1	0.033	[NT]		99	[NT]
Total Cyanide	mg/L	0.004	Inorg-014	<0.004	1	<0.004	<0.004	0	94	104
Chloride, Cl	mg/L	1	Inorg-081	<1	1	2000	[NT]		97	[NT]
Sulphate, SO4	mg/L	1	Inorg-081	<1	1	780	[NT]		93	[NT]
Nitrite as N in water	mg/L	0.005	Inorg-055	<0.005	1	<0.005	[NT]		112	[NT]
Nitrate as N in water	mg/L	0.005	Inorg-055	<0.005	1	0.02	[NT]		94	[NT]
Phosphate as P in water	mg/L	0.005	Inorg-060	<0.005	1	0.007	[NT]		114	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	6	24/09/2019	24/09/2019		[NT]	[NT]
Date analysed	-			[NT]	6	24/09/2019	24/09/2019		[NT]	[NT]
Ammonia as N in water	mg/L	0.005	Inorg-057	[NT]	6	0.47	[NT]		[NT]	[NT]
Total Cyanide	mg/L	0.004	Inorg-014	[NT]	6	<0.004	[NT]		[NT]	[NT]
Chloride, Cl	mg/L	1	Inorg-081	[NT]	6	7200	6800	6	[NT]	[NT]
Sulphate, SO4	mg/L	1	Inorg-081	[NT]	6	530	520	2	[NT]	[NT]
Nitrite as N in water	mg/L	0.005	Inorg-055	[NT]	6	0.097	[NT]		[NT]	[NT]
Nitrate as N in water	mg/L	0.005	Inorg-055	[NT]	6	370	[NT]		[NT]	[NT]
Phosphate as P in water	mg/L	0.005	Inorg-060	[NT]	6	<0.005	[NT]		[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.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Report Comments

Cations in water Dissolved - # Percent recovery is not possible to report due to the high concentration of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

Total cyanide: Sample#5 was analysed from unpreserved amber bottle.

Nutrients for samples #1-4 have exceeded the recommended technical holding times, Envirolab Group form 347 "Recommended Preservation and Holding Times" can be provided on request (available on the Envirolab website)

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CERTIFICATE OF ANALYSIS 226863

Client Details

Client	Douglas Partners Pty Ltd
Attention	Joel Hall
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**84822.02, Eastern Creek**
Number of Samples	9 Water
Date samples received	24/09/2019
Date completed instructions received	24/09/2019

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	25/09/2019
Date of Issue	25/09/2019
Reissue Details	This report replaces R00 created on 25/09/2019 due to: Amended with Cl and Sulphate results for samples#4 and #5.

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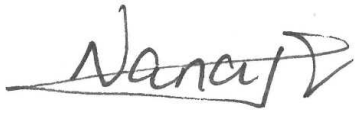
Results Approved By
Diego Bigolin, Team Leader, Inorganics
Jaimie Loa-Kum-Cheung, Metals Supervisor
Nick Sarlamis, Inorganics Supervisor
Steven Luong, Organics Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

VOCs in water						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Dichlorodifluoromethane	µg/L	<10	<10	<10	<10	<10
Chloromethane	µg/L	<10	<10	<10	<10	<10
Vinyl Chloride	µg/L	<10	<10	<10	<10	<10
Bromomethane	µg/L	<10	<10	<10	<10	<10
Chloroethane	µg/L	<10	<10	<10	<10	<10
Trichlorofluoromethane	µg/L	<10	<10	<10	<10	<10
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
1,1-dichloroethane	µg/L	<1	<1	<1	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1
2,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
1,2-dichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-dichloropropene	µg/L	<1	<1	<1	<1	<1
Cyclohexane	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Benzene	µg/L	<1	<1	<1	<1	<1
Dibromomethane	µg/L	<1	<1	<1	<1	<1
1,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<1	<1	<1	<1	<1
trans-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
1,3-dichloropropane	µg/L	<1	<1	<1	<1	<1
Dibromochloromethane	µg/L	<1	<1	<1	<1	<1
1,2-dibromoethane	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1

VOCs in water						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Bromoform	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
Styrene	µg/L	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
o-xylene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichloropropane	µg/L	<1	<1	<1	<1	<1
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1
Bromobenzene	µg/L	<1	<1	<1	<1	<1
n-propyl benzene	µg/L	<1	<1	<1	<1	<1
2-chlorotoluene	µg/L	<1	<1	<1	<1	<1
4-chlorotoluene	µg/L	<1	<1	<1	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
Tert-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
Sec-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
4-isopropyl toluene	µg/L	<1	<1	<1	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
n-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	105	114	113	115	108
Surrogate toluene-d8	%	92	100	99	100	98
Surrogate 4-BFB	%	108	117	114	114	114

VOCs in water			
Our Reference		226863-6	226863-7
Your Reference	UNITS	BH208	BD1/20190924
Date Sampled		24/09/2019	24/09/2019
Type of sample		Water	Water
Date extracted	-	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019
Dichlorodifluoromethane	µg/L	<10	<10
Chloromethane	µg/L	<10	<10
Vinyl Chloride	µg/L	<10	<10
Bromomethane	µg/L	<10	<10
Chloroethane	µg/L	<10	<10
Trichlorofluoromethane	µg/L	<10	<10
1,1-Dichloroethene	µg/L	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1
1,1-dichloroethane	µg/L	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1
Bromochloromethane	µg/L	<1	<1
Chloroform	µg/L	<1	<1
2,2-dichloropropane	µg/L	<1	<1
1,2-dichloroethane	µg/L	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1
1,1-dichloropropene	µg/L	<1	<1
Cyclohexane	µg/L	<1	<1
Carbon tetrachloride	µg/L	<1	<1
Benzene	µg/L	<1	<1
Dibromomethane	µg/L	<1	<1
1,2-dichloropropane	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Bromodichloromethane	µg/L	<1	<1
trans-1,3-dichloropropene	µg/L	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1
Toluene	µg/L	<1	<1
1,3-dichloropropane	µg/L	<1	<1
Dibromochloromethane	µg/L	<1	<1
1,2-dibromoethane	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1
Chlorobenzene	µg/L	<1	<1
Ethylbenzene	µg/L	<1	<1

VOCs in water			
Our Reference	UNITS	226863-6	226863-7
Your Reference		BH208	BD1/20190924
Date Sampled		24/09/2019	24/09/2019
Type of sample		Water	Water
Bromoform	µg/L	<1	<1
m+p-xylene	µg/L	<2	<2
Styrene	µg/L	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1
o-xylene	µg/L	<1	<1
1,2,3-trichloropropane	µg/L	<1	<1
Isopropylbenzene	µg/L	<1	<1
Bromobenzene	µg/L	<1	<1
n-propyl benzene	µg/L	<1	<1
2-chlorotoluene	µg/L	<1	<1
4-chlorotoluene	µg/L	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1
Tert-butyl benzene	µg/L	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1
Sec-butyl benzene	µg/L	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1
4-isopropyl toluene	µg/L	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1
n-butyl benzene	µg/L	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1
Hexachlorobutadiene	µg/L	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1
Surrogate Dibromofluoromethane	%	117	109
Surrogate toluene-d8	%	98	98
Surrogate 4-BFB	%	116	116

vTRH(C6-C10)/BTEXN in Water						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
TRH C_6 - C_9	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10}	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	105	114	113	115	108
Surrogate toluene-d8	%	92	100	99	100	98
Surrogate 4-BFB	%	108	117	114	114	114

vTRH(C6-C10)/BTEXN in Water				
Our Reference		226863-6	226863-8	226863-9
Your Reference	UNITS	BH208	Trip Spike	Trip Blank
Date Sampled		24/09/2019	24/09/2019	24/09/2019
Type of sample		Water	Water	Water
Date extracted	-	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019
TRH C_6 - C_9	µg/L	<10	[NA]	[NA]
TRH C_6 - C_{10}	µg/L	<10	[NA]	[NA]
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	[NA]	[NA]
Benzene	µg/L	<1	117%	<1
Toluene	µg/L	<1	102%	<1
Ethylbenzene	µg/L	<1	105%	<1
m+p-xylene	µg/L	<2	110%	<2
o-xylene	µg/L	<1	104%	<1
Naphthalene	µg/L	<1	[NA]	[NA]
Surrogate Dibromofluoromethane	%	117	107	106
Surrogate toluene-d8	%	98	101	98
Surrogate 4-BFB	%	116	111	116

svTRH (C10-C40) in Water						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
TRH C_{10} - C_{14}	µg/L	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100	<100	<100	<100
TRH >C_{10} - C_{16}	µg/L	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50	<50	<50	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100	<100	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	99	113	122	103	103

svTRH (C10-C40) in Water		
Our Reference		226863-6
Your Reference	UNITS	BH208
Date Sampled		24/09/2019
Type of sample		Water
Date extracted	-	25/09/2019
Date analysed	-	25/09/2019
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	%	92

PAHs in Water - Low Level						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Naphthalene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	93	91	95	105	97

PAHs in Water - Low Level		
Our Reference		226863-6
Your Reference	UNITS	BH208
Date Sampled		24/09/2019
Type of sample		Water
Date extracted	-	25/09/2019
Date analysed	-	25/09/2019
Naphthalene	µg/L	<0.2
Acenaphthylene	µg/L	<0.1
Acenaphthene	µg/L	<0.1
Fluorene	µg/L	<0.1
Phenanthrene	µg/L	<0.1
Anthracene	µg/L	<0.1
Fluoranthene	µg/L	<0.1
Pyrene	µg/L	<0.1
Benzo(a)anthracene	µg/L	<0.1
Chrysene	µg/L	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2
Benzo(a)pyrene	µg/L	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	97

OCP in water - low level						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
HCB	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
alpha-BHC	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
gamma-BHC	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
beta-BHC	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
delta-BHC	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Aldrin	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor Epoxide	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
gamma-Chlordane	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
alpha-Chlordane	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Endosulfan I	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
pp-DDE	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Dieldrin	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Endrin	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
pp-DDD	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Endosulfan II	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
DDT	µg/L	<0.006	<0.006	<0.006	<0.006	<0.006
Endrin Aldehyde	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Endosulfan Sulphate	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Methoxychlor	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Surrogate TCMX	%	70	78	83	83	74

OCP in water - low level		
Our Reference		226863-6
Your Reference	UNITS	BH208
Date Sampled		24/09/2019
Type of sample		Water
Date extracted	-	25/09/2019
Date analysed	-	25/09/2019
HCB	µg/L	<0.01
alpha-BHC	µg/L	<0.01
gamma-BHC	µg/L	<0.01
beta-BHC	µg/L	<0.01
Heptachlor	µg/L	<0.01
delta-BHC	µg/L	<0.01
Aldrin	µg/L	<0.01
Heptachlor Epoxide	µg/L	<0.01
gamma-Chlordane	µg/L	<0.01
alpha-Chlordane	µg/L	<0.01
Endosulfan I	µg/L	<0.01
pp-DDE	µg/L	<0.01
Dieldrin	µg/L	<0.01
Endrin	µg/L	<0.01
pp-DDD	µg/L	<0.01
Endosulfan II	µg/L	<0.01
DDT	µg/L	<0.006
Endrin Aldehyde	µg/L	<0.01
Endosulfan Sulphate	µg/L	<0.01
Methoxychlor	µg/L	<0.01
Surrogate TCMX	%	70

PCBs in Water - Low Level						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Aroclor 1016	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	70	78	83	83	74

PCBs in Water - Low Level		
Our Reference		226863-6
Your Reference	UNITS	BH208
Date Sampled		24/09/2019
Type of sample		Water
Date extracted	-	25/09/2019
Date analysed	-	25/09/2019
Aroclor 1016	µg/L	<0.1
Aroclor 1221	µg/L	<0.1
Aroclor 1232	µg/L	<0.1
Aroclor 1242	µg/L	<0.1
Aroclor 1248	µg/L	<0.1
Aroclor 1254	µg/L	<0.1
Aroclor 1260	µg/L	<0.1
Surrogate TCMX	%	70

Total Phenolics in Water						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Total Phenolics (as Phenol)	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Total Phenolics in Water		
Our Reference		226863-6
Your Reference	UNITS	BH208
Date Sampled		24/09/2019
Type of sample		Water
Date extracted	-	25/09/2019
Date analysed	-	25/09/2019
Total Phenolics (as Phenol)	mg/L	<0.05

HM in water - dissolved						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Arsenic-Dissolved	µg/L	1	<1	<1	<1	3
Cadmium-Dissolved	µg/L	0.2	0.1	0.2	<0.1	0.4
Chromium-Dissolved	µg/L	<1	<1	<1	2	1
Copper-Dissolved	µg/L	7	2	3	<1	7
Lead-Dissolved	µg/L	<1	<1	<1	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel-Dissolved	µg/L	2	6	10	27	11
Zinc-Dissolved	µg/L	12	6	22	3	59

HM in water - dissolved			
Our Reference		226863-6	226863-7
Your Reference	UNITS	BH208	BD1/20190924
Date Sampled		24/09/2019	24/09/2019
Type of sample		Water	Water
Date prepared	-	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019
Arsenic-Dissolved	µg/L	3	2
Cadmium-Dissolved	µg/L	0.2	0.2
Chromium-Dissolved	µg/L	<1	<1
Copper-Dissolved	µg/L	9	9
Lead-Dissolved	µg/L	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05
Nickel-Dissolved	µg/L	6	5
Zinc-Dissolved	µg/L	23	21

Cations in water Dissolved						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Date digested	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Calcium - Dissolved	mg/L	200	61	51	150	320
Magnesium - Dissolved	mg/L	200	290	490	650	290
Hardness	mgCaCO 3 /L	1,300	1,300	2,200	3,100	2,000

Cations in water Dissolved		
Our Reference		226863-6
Your Reference	UNITS	BH208
Date Sampled		24/09/2019
Type of sample		Water
Date digested	-	25/09/2019
Date analysed	-	25/09/2019
Calcium - Dissolved	mg/L	190
Magnesium - Dissolved	mg/L	690
Hardness	mgCaCO 3 /L	3,300

Miscellaneous Inorganics						
Our Reference		226863-1	226863-2	226863-3	226863-4	226863-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	24/09/2019	24/09/2019	24/09/2019	24/09/2019	24/09/2019
Date analysed	-	24/09/2019	24/09/2019	24/09/2019	24/09/2019	24/09/2019
Ammonia as N in water	mg/L	0.033	0.25	0.75	1.3	1.7
Total Cyanide	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004
Chloride, Cl	mg/L	2,000	4,700	4,600	8,600	4,900
Sulphate, SO4	mg/L	780	510	660	520	2,200
Nitrite as N in water	mg/L	<0.005	0.008	0.038	<0.005	0.051
Nitrate as N in water	mg/L	0.02	0.19	1.2	<0.005	0.40
Phosphate as P in water	mg/L	0.007	0.082	0.016	<0.005	<0.005

Miscellaneous Inorganics		
Our Reference		226863-6
Your Reference	UNITS	BH208
Date Sampled		24/09/2019
Type of sample		Water
Date prepared	-	24/09/2019
Date analysed	-	24/09/2019
Ammonia as N in water	mg/L	0.47
Total Cyanide	mg/L	<0.004
Chloride, Cl	mg/L	7,200
Sulphate, SO4	mg/L	530
Nitrite as N in water	mg/L	0.097
Nitrate as N in water	mg/L	370
Phosphate as P in water	mg/L	<0.005

Method ID	Methodology Summary
Inorg-014	Cyanide - free, total, weak acid dissociable by segmented flow analyser (in line dialysis with colourimetric finish). Solids/Filters and sorbents are extracted in a caustic media prior to analysis. Impingers are pH adjsuted as required prior to analysis. Cyanides amenable to Chlorination - samples are analysed untreated and treated with hyperchlorite to assess the potential for chlorination of cyanide forms. Based on APHA latest edition, 4500-CN_G,H.
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	Nitrate - determined colourimetrically. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-055	Nitrite - determined colourimetrically based on APHA latest edition NO2- B. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a KCl extraction.
Inorg-060	Phosphate determined colourimetrically based on EPA365.1 and APHA latest edition 4500 P E. Waters samples are filtered on receipt prior to analysis. 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. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
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-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.

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
Date analysed	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
Dichlorodifluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Vinyl Chloride	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromomethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichlorofluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-Dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trans-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	121	[NT]
Cis-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroform	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
2,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
1,1,1-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	110	[NT]
1,1-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Cyclohexane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Carbon tetrachloride	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibromomethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	118	[NT]
Bromodichloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
trans-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
cis-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	94	[NT]
1,2-dibromoethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Tetrachloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
1,1,1,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromoform	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
m+p-xylene	µg/L	2	Org-013	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Styrene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
o-xylene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Isopropylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-propyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3,5-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Tert-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Sec-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,4-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-isopropyl toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dibromo-3-chloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Hexachlorobutadiene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-013	106	[NT]	[NT]	[NT]	[NT]	105	[NT]
Surrogate toluene-d8	%		Org-013	99	[NT]	[NT]	[NT]	[NT]	102	[NT]
Surrogate 4-BFB	%		Org-013	112	[NT]	[NT]	[NT]	[NT]	106	[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	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
Date analysed	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
TRH C_6 - C_9	µg/L	10	Org-016	<10	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-016	<10	[NT]	[NT]	[NT]	[NT]	114	[NT]
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	117	[NT]
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	114	[NT]
m+p-xylene	µg/L	2	Org-016	<2	[NT]	[NT]	[NT]	[NT]	115	[NT]
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Naphthalene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-016	106	[NT]	[NT]	[NT]	[NT]	105	[NT]
Surrogate toluene-d8	%		Org-016	99	[NT]	[NT]	[NT]	[NT]	102	[NT]
Surrogate 4-BFB	%		Org-016	112	[NT]	[NT]	[NT]	[NT]	106	[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	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
Date analysed	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	108	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	94	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	113	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	108	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	94	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	113	[NT]
Surrogate o-Terphenyl	%		Org-003	109	[NT]	[NT]	[NT]	[NT]	118	[NT]

QUALITY CONTROL: PAHs in Water - Low Level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
Date analysed	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
Naphthalene	µg/L	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	120	[NT]
Acenaphthylene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Phenanthrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	109	[NT]	[NT]	[NT]	[NT]	109	[NT]

QUALITY CONTROL: OCP in water - low level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
Date analysed	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
HCB	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-BHC	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	98	[NT]
gamma-BHC	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	101	[NT]
Heptachlor	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	71	[NT]
delta-BHC	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	109	[NT]
Heptachlor Epoxide	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	116	[NT]
gamma-Chlordane	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-Chlordane	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	115	[NT]
Dieldrin	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	70	[NT]
Endrin	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	108	[NT]
pp-DDD	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	115	[NT]
Endosulfan II	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
DDT	µg/L	0.006	Org-005	<0.006	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endrin Aldehyde	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	70	[NT]
Methoxychlor	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-005	85	[NT]	[NT]	[NT]	[NT]	94	[NT]

QUALITY CONTROL: PCBs in Water - Low Level					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
Date analysed	-			25/09/2019	[NT]	[NT]	[NT]	[NT]	25/09/2019	[NT]
Aroclor 1016	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	72	[NT]
Aroclor 1254	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1260	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-006	85	[NT]	[NT]	[NT]	[NT]	88	[NT]

QUALITY CONTROL: Total Phenolics in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	226863-2
Date extracted	-			25/09/2019	1	25/09/2019	25/09/2019		25/09/2019	25/09/2019
Date analysed	-			25/09/2019	1	25/09/2019	25/09/2019		25/09/2019	25/09/2019
Total Phenolics (as Phenol)	mg/L	0.05	Inorg-031	<0.05	1	<0.05	<0.05	0	103	97

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	226863-2
Date prepared	-			25/09/2019	1	25/09/2019	25/09/2019		25/09/2019	25/09/2019
Date analysed	-			25/09/2019	1	25/09/2019	25/09/2019		25/09/2019	25/09/2019
Arsenic-Dissolved	µg/L	1	Metals-022	<1	1	1	1	0	100	104
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	1	0.2	0.2	0	103	96
Chromium-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	100	95
Copper-Dissolved	µg/L	1	Metals-022	<1	1	7	7	0	108	85
Lead-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	105	90
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	1	<0.05	<0.05	0	103	86
Nickel-Dissolved	µg/L	1	Metals-022	<1	1	2	2	0	101	87
Zinc-Dissolved	µg/L	1	Metals-022	<1	1	12	13	8	100	92

QUALITY CONTROL: Cations in water Dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	226863-2
Date digested	-			25/09/2019	1	25/09/2019	25/09/2019		25/09/2019	25/09/2019
Date analysed	-			25/09/2019	1	25/09/2019	25/09/2019		25/09/2019	25/09/2019
Calcium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	200	210	5	99	#
Magnesium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	200	200	0	97	#
Hardness	mgCaCO 3 /L	3		[NT]	1	1300	1400	7	[NT]	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	226863-2
Date prepared	-			24/09/2019	1	24/09/2019	24/09/2019		24/09/2019	24/09/2019
Date analysed	-			24/09/2019	1	24/09/2019	24/09/2019		24/09/2019	24/09/2019
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	1	0.033	[NT]		99	[NT]
Total Cyanide	mg/L	0.004	Inorg-014	<0.004	1	<0.004	<0.004	0	94	104
Chloride, Cl	mg/L	1	Inorg-081	<1	1	2000	[NT]		97	[NT]
Sulphate, SO4	mg/L	1	Inorg-081	<1	1	780	[NT]		93	[NT]
Nitrite as N in water	mg/L	0.005	Inorg-055	<0.005	1	<0.005	[NT]		112	[NT]
Nitrate as N in water	mg/L	0.005	Inorg-055	<0.005	1	0.02	[NT]		94	[NT]
Phosphate as P in water	mg/L	0.005	Inorg-060	<0.005	1	0.007	[NT]		114	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	6	24/09/2019	24/09/2019		[NT]	[NT]
Date analysed	-			[NT]	6	24/09/2019	24/09/2019		[NT]	[NT]
Ammonia as N in water	mg/L	0.005	Inorg-057	[NT]	6	0.47	[NT]		[NT]	[NT]
Total Cyanide	mg/L	0.004	Inorg-014	[NT]	6	<0.004	[NT]		[NT]	[NT]
Chloride, Cl	mg/L	1	Inorg-081	[NT]	6	7200	6800	6	[NT]	[NT]
Sulphate, SO4	mg/L	1	Inorg-081	[NT]	6	530	520	2	[NT]	[NT]
Nitrite as N in water	mg/L	0.005	Inorg-055	[NT]	6	0.097	[NT]		[NT]	[NT]
Nitrate as N in water	mg/L	0.005	Inorg-055	[NT]	6	370	[NT]		[NT]	[NT]
Phosphate as P in water	mg/L	0.005	Inorg-060	[NT]	6	<0.005	[NT]		[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.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Report Comments

Cations in water Dissolved - # Percent recovery is not possible to report due to the high concentration of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

Total cyanide: Sample#5 was analysed from unpreserved amber bottle.

Nutrients for samples #1-4 have exceeded the recommended technical holding times, Envirolab Group form 347 "Recommended Preservation and Holding Times" can be provided on request (available on the Envirolab website)

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No: 84822.02	**Suburb:** Eastern Creek	**To:** Lab name	
Project Name: Eastern Creek	**Order Number**		
Project Manager: JS	**Sampler:** JS	**Attn:**	
Emails: l.james-hall;jack.snowden@douglaspartners.com.	paul.gorman@douglaspartners.com.au	**Phone:**	
Date Required: 24 hr TAT		**Email:**	
Prior Storage: ☐ Eski	Do samples contain 'potential' HBM? Yes ☐ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)		

Sample ID	Lab ID	Date Sampled	Sample Type (S - soil W - water)	Container Type (G - glass P - plastic)	Analytes: Combination (HM8, TRH, BTEX, PAH (LOW LVL), OCP (LOW LVL), PCB (LOW LVL), PHENOLS	VOCs	Hardness	Ammonia/Cyanide	Anions (Cl, SO4, NO2, NO3, PO4)	8HM, VOCs	Notes/preservation
BH4	1	20/09/19	W	G/P	x	x	x	x	x		
BH2	2	20/09/19	W	G/P	x	x	x	x	x		
BH213	3	20/09/19	W	G/P	x	x	x	x	x		
BH204	4	20/09/19	W	G/P	x	x	x	x	x		
BH201	5	24/09/19	W	G/P	x	x	x	x	x		
BH208	6	24/09/19	W	G/P	x	x	x	x	x		
BD1/20190924	7	24/09/19	W	G/P						x	
Trip Spike	8	24/09/19	W	G							Test for BTEX
Trip Blank	9	24/09/19	W	G							Test for BTEX
PQL (S) mg/kg									**ANZECC PQLs req'd for all water analytes** ☐		

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 226863 / 3419
Date Received:
Time Received: 17:50
Received by: AB
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit
Metals to Analyse: 8HM unless specified here:
Lab Report/Reference No:
Total number of samples in container: **Relinquished by:** **Transported to laboratory by:**
Send Results to: Douglas Partners Pty Ltd **Address:** **Phone:** **Fax:**
Signed: JS **Received by:** Andy Zhang AB **Date & Time:** 24/9 17:50

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No: 84822.02	**Suburb:** Eastern Creek	**To:** Lab name	
Project Name: Eastern Creek	**Order Number**		
Project Manager: JS	**Sampler:** JS	**Attn:**	
Emails: l.james-hall;jack.snowden@douglaspartners.com.	paul.gorman@douglaspartners.com.au	**Phone:**	
Date Required: 24 hr TAT		**Email:**	
Prior Storage: ☐ Eski	Do samples contain 'potential' HBM? Yes ☐ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)		

Sample ID	Lab ID	Date Sampled	Sample Type (S - soil W - water)	Container Type (G - glass P - plastic)	Analytes: Combination (HM8, TRH, BTEX, PAH (LOW LVL), OCP (LOW LVL), PCB (LOW LVL), PHENOLS	VOCs	Hardness	Ammonia/Cyanide	Anions (Cl, SO4, NO2, NO3, PO4)	8HM, VOCs	Notes/preservation
BH4	1	20/09/19	W	G/P	x	x	x	x	x		
BH2	2	20/09/19	W	G/P	x	x	x	x	x		
BH213	3	20/09/19	W	G/P	x	x	x	x	x		
BH204	4	20/09/19	W	G/P	x	x	x	x	x		
BH201	5	24/09/19	W	G/P	x	x	x	x	x		
BH208	6	24/09/19	W	G/P	x	x	x	x	x		
BD1/20190924	7	24/09/19	W	G/P						x	
Trip Spike	8	24/09/19	W	G							Test for BTEX
Trip Blank	9	24/09/19	W	G							Test for BTEX
PQL (S) mg/kg									**ANZECC PQLs req'd for all water analytes** ☐		

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 226863 / 3419
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Time Received: 17:50
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PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit
Metals to Analyse: 8HM unless specified here:
Lab Report/Reference No:
Total number of samples in container: **Relinquished by:** **Transported to laboratory by:**
Send Results to: Douglas Partners Pty Ltd **Address:** **Phone:** **Fax:**
Signed: JS **Received by:** Andy Zhang AB **Date & Time:** 24/9 17:50

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	Douglas Partners Pty Ltd
Attention	Joel Hall

Sample Login Details

Your reference	84822.02, Eastern Creek
Envirolab Reference	226863
Date Sample Received	24/09/2019
Date Instructions Received	24/09/2019
Date Results Expected to be Reported	25/09/2019

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	9 Water
Turnaround Time Requested	1 day
Temperature on Receipt (°C)	6.2
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
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customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	VOCs in water	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water - Low Level	OCP in water - low level	PCBs in Water - Low Level	Total Phenolicsin Water	HM in water - total	Cations in water Dissolved	Ammonia as N in water	Total Cyanide	Chloride, Cl	Sulphate, SO4	Nitrite as N in water	Nitrate as N in water	Phosphate as P in water
BH4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH213	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH204	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH201	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH208	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BD1/20190924	✓							✓								
Trip Spike		✓														
Trip Blank		✓														

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.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

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 226390

Client Details

Client	Douglas Partners Pty Ltd
Attention	Paul Gorman
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**84822.02, Eastern Creek**
Number of Samples	40 soil
Date samples received	18/09/2019
Date completed instructions received	18/09/2019

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	19/09/2019
Date of Issue	19/09/2019

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Asbestos Approved By
Analysed by Asbestos Approved Identifier: Aida Marner
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Diego Bigolin, Team Leader, Inorganics
Jaimie Loa-Kum-Cheung, Metals Supervisor
Josh Williams, Chemist
Lucy Zhu, Senior Asbestos Analyst
Steven Luong, Organics Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

VOCs in soil						
Our Reference		226390-10	226390-26	226390-28	226390-30	226390-31
Your Reference	UNITS	BH205	BH217	BH219	BH220	BH220
Depth		0.0-0.2	0.2-0.3	0.3-0.4	0.2-0.3	0.4-0.5
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Dichlorodifluoromethane	mg/kg	<1	<1	<1	<1	<1
Chloromethane	mg/kg	<1	<1	<1	<1	<1
Vinyl Chloride	mg/kg	<1	<1	<1	<1	<1
Bromomethane	mg/kg	<1	<1	<1	<1	<1
Chloroethane	mg/kg	<1	<1	<1	<1	<1
Trichlorofluoromethane	mg/kg	<1	<1	<1	<1	<1
1,1-Dichloroethene	mg/kg	<1	<1	<1	<1	<1
trans-1,2-dichloroethene	mg/kg	<1	<1	<1	<1	<1
1,1-dichloroethane	mg/kg	<1	<1	<1	<1	<1
cis-1,2-dichloroethene	mg/kg	<1	<1	<1	<1	<1
bromochloromethane	mg/kg	<1	<1	<1	<1	<1
chloroform	mg/kg	<1	<1	<1	<1	<1
2,2-dichloropropane	mg/kg	<1	<1	<1	<1	<1
1,2-dichloroethane	mg/kg	<1	<1	<1	<1	<1
1,1,1-trichloroethane	mg/kg	<1	<1	<1	<1	<1
1,1-dichloropropene	mg/kg	<1	<1	<1	<1	<1
Cyclohexane	mg/kg	<1	<1	<1	<1	<1
carbon tetrachloride	mg/kg	<1	<1	<1	<1	<1
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
dibromomethane	mg/kg	<1	<1	<1	<1	<1
1,2-dichloropropane	mg/kg	<1	<1	<1	<1	<1
trichloroethene	mg/kg	<1	<1	<1	<1	<1
bromodichloromethane	mg/kg	<1	<1	<1	<1	<1
trans-1,3-dichloropropene	mg/kg	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	mg/kg	<1	<1	<1	<1	<1
1,1,2-trichloroethane	mg/kg	<1	<1	<1	<1	<1
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichloropropane	mg/kg	<1	<1	<1	<1	<1
dibromochloromethane	mg/kg	<1	<1	<1	<1	<1
1,2-dibromoethane	mg/kg	<1	<1	<1	<1	<1
tetrachloroethene	mg/kg	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	mg/kg	<1	<1	<1	<1	<1
chlorobenzene	mg/kg	<1	<1	<1	<1	<1

VOCs in soil						
Our Reference		226390-10	226390-26	226390-28	226390-30	226390-31
Your Reference	UNITS	BH205	BH217	BH219	BH220	BH220
Depth		0.0-0.2	0.2-0.3	0.3-0.4	0.2-0.3	0.4-0.5
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
bromoform	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
styrene	mg/kg	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	mg/kg	<1	<1	<1	<1	<1
o-Xylene	mg/kg	<1	<1	<1	<1	<1
1,2,3-trichloropropane	mg/kg	<1	<1	<1	<1	<1
isopropylbenzene	mg/kg	<1	<1	<1	<1	<1
bromobenzene	mg/kg	<1	<1	<1	<1	<1
n-propyl benzene	mg/kg	<1	<1	<1	<1	<1
2-chlorotoluene	mg/kg	<1	<1	<1	<1	<1
4-chlorotoluene	mg/kg	<1	<1	<1	<1	<1
1,3,5-trimethyl benzene	mg/kg	<1	<1	<1	<1	<1
tert-butyl benzene	mg/kg	<1	<1	<1	<1	<1
1,2,4-trimethyl benzene	mg/kg	<1	<1	<1	<1	<1
1,3-dichlorobenzene	mg/kg	<1	<1	<1	<1	<1
sec-butyl benzene	mg/kg	<1	<1	<1	<1	<1
1,4-dichlorobenzene	mg/kg	<1	<1	<1	<1	<1
4-isopropyl toluene	mg/kg	<1	<1	<1	<1	<1
1,2-dichlorobenzene	mg/kg	<1	<1	<1	<1	<1
n-butyl benzene	mg/kg	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	mg/kg	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	mg/kg	<1	<1	<1	<1	<1
hexachlorobutadiene	mg/kg	<1	<1	<1	<1	<1
1,2,3-trichlorobenzene	mg/kg	<1	<1	<1	<1	<1
Surrogate Dibromofluorometha	%	100	99	101	105	101
Surrogate aaa-Trifluorotoluene	%	85	90	96	98	89
Surrogate Toluene-d_8	%	97	96	96	96	97
Surrogate 4-Bromofluorobenzene	%	88	87	89	91	91

VOCs in soil		
Our Reference		226390-34
Your Reference	UNITS	BH223
Depth		0.1-0.2
Date Sampled		16/09/2019
Type of sample		soil
Date extracted	-	18/09/2019
Date analysed	-	19/09/2019
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

VOCs in soil		
Our Reference		226390-34
Your Reference	UNITS	BH223
Depth		0.1-0.2
Date Sampled		16/09/2019
Type of sample		soil
Ethylbenzene	mg/kg	<1
bromoform	mg/kg	<1
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	%	102
Surrogate aaa-Trifluorotoluene	%	84
Surrogate Toluene-d_8	%	95
Surrogate 4-Bromofluorobenzene	%	92

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		226390-1	226390-2	226390-3	226390-4	226390-5
Your Reference	UNITS	BH201	BH201	BH202	BH202	BH203
Depth		0.0-0.2	0.8-1.0	0.0-0.2	0.4-0.45	0.4-0.5
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	87	78	98	98	83

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		226390-6	226390-7	226390-8	226390-9	226390-10
Your Reference	UNITS	BH203	BH204	BH204	BH204	BH205
Depth		0.9-1.0	0.0-0.2	0.4-0.5	0.8-1.0	0.0-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	86	99	80	91	85

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		226390-11	226390-12	226390-13	226390-14	226390-15
Your Reference	UNITS	BH205	BH205	BH205	BH206	BH206
Depth		0.4-0.5	0.9-1.0	1.4-1.5	0.0-0.2	0.4-0.5
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	91	88	97	101	96

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		226390-16	226390-17	226390-18	226390-19	226390-20
Your Reference	UNITS	BH207	BH207	BH211	BH211	BH212
Depth		0.4-0.5	0.8-1.0	0.4-0.5	1.6-1.7	0.0-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	94	94	94	94	94

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		226390-21	226390-22	226390-23	226390-24	226390-25
Your Reference	UNITS	BH212	BH212	BH214	BH215	BH216
Depth		0.9-1.0	1.9-2.0	0.1-0.2	0.2-0.3	0.1-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	85	92	97	98	101

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		226390-26	226390-27	226390-28	226390-29	226390-30
Your Reference	UNITS	BH217	BH217	BH219	BH220	BH220
Depth		0.2-0.3	0.5-0.6	0.3-0.4	0.1-0.2	0.2-0.3
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	90	93	96	101	98

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		226390-31	226390-32	226390-33	226390-34	226390-35
Your Reference	UNITS	BH220	BH221	BH222	BH223	BH224
Depth		0.4-0.5	0.4-0.5	0.0-0.1	0.1-0.2	0.3-0.4
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	89	95	99	84	86

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		226390-36	226390-37	226390-38	226390-39	226390-40
Your Reference	UNITS	BH225	BD1A/20190916	BD3/20190916	BD1/20190916	BH14
Depth		0.1-0.2	-	-	-	0.3-0.4
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	99	91	90	100	91

svTRH (C10-C40) in Soil						
Our Reference		226390-1	226390-2	226390-3	226390-4	226390-5
Your Reference	UNITS	BH201	BH201	BH202	BH202	BH203
Depth		0.0-0.2	0.8-1.0	0.0-0.2	0.4-0.45	0.4-0.5
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	280	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	970	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	820	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	1,300	100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	2,100	100	<50
Surrogate o-Terphenyl	%	84	80	97	73	86

svTRH (C10-C40) in Soil						
Our Reference		226390-6	226390-7	226390-8	226390-9	226390-10
Your Reference	UNITS	BH203	BH204	BH204	BH204	BH205
Depth		0.9-1.0	0.0-0.2	0.4-0.5	0.8-1.0	0.0-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	270
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	260
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	350
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	600
Surrogate o-Terphenyl	%	89	88	86	94	89

svTRH (C10-C40) in Soil						
Our Reference		226390-11	226390-12	226390-13	226390-14	226390-15
Your Reference	UNITS	BH205	BH205	BH205	BH206	BH206
Depth		0.4-0.5	0.9-1.0	1.4-1.5	0.0-0.2	0.4-0.5
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	430	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	810	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	900	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	820	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	1,700	<50
Surrogate o-Terphenyl	%	87	85	94	102	85

svTRH (C10-C40) in Soil						
Our Reference		226390-16	226390-17	226390-18	226390-19	226390-20
Your Reference	UNITS	BH207	BH207	BH211	BH211	BH212
Depth		0.4-0.5	0.8-1.0	0.4-0.5	1.6-1.7	0.0-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	110
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	120
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	130
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	250
Surrogate o-Terphenyl	%	86	86	94	86	86

svTRH (C10-C40) in Soil						
Our Reference		226390-21	226390-22	226390-23	226390-24	226390-25
Your Reference	UNITS	BH212	BH212	BH214	BH215	BH216
Depth		0.9-1.0	1.9-2.0	0.1-0.2	0.2-0.3	0.1-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	120
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	410
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	370
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	490
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	860
Surrogate o-Terphenyl	%	88	86	86	88	92

svTRH (C10-C40) in Soil						
Our Reference		226390-26	226390-27	226390-28	226390-29	226390-30
Your Reference	UNITS	BH217	BH217	BH219	BH220	BH220
Depth		0.2-0.3	0.5-0.6	0.3-0.4	0.1-0.2	0.2-0.3
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	180	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	320	<100	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	380	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	230	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	610	<50	<50	<50	<50
Surrogate o-Terphenyl	%	94	86	95	85	86

svTRH (C10-C40) in Soil						
Our Reference		226390-31	226390-32	226390-33	226390-34	226390-35
Your Reference	UNITS	BH220	BH221	BH222	BH223	BH224
Depth		0.4-0.5	0.4-0.5	0.0-0.1	0.1-0.2	0.3-0.4
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	300	260	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	1,000	530	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	60	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	60	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	1,100	620	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	280	210	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	1,400	840	<50
Surrogate o-Terphenyl	%	86	87	111	107	87

svTRH (C10-C40) in Soil						
Our Reference		226390-36	226390-37	226390-38	226390-39	226390-40
Your Reference	UNITS	BH225	BD1A/20190916	BD3/20190916	BD1/20190916	BH14
Depth		0.1-0.2	-	-	-	0.3-0.4
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	210	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	550	<100	120	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	610	<100	130	<100	<100
TRH >C_{34} -C_{40}	mg/kg	170	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	780	<50	130	<50	<50
Surrogate o-Terphenyl	%	104	85	89	86	86

PAHs in Soil						
Our Reference		226390-1	226390-2	226390-3	226390-4	226390-5
Your Reference	UNITS	BH201	BH201	BH202	BH202	BH203
Depth		0.0-0.2	0.8-1.0	0.0-0.2	0.4-0.45	0.4-0.5
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	0.4	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	0.9	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	2.5	0.2	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	0.7	0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	0.9	0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.5	0.1	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	0.8	0.1	<0.1
Total +ve PAH's	mg/kg	0.2	<0.05	8.6	0.83	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	0.8	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	0.8	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	0.8	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	85	92	88	90	94

PAHs in Soil						
Our Reference		226390-6	226390-7	226390-8	226390-9	226390-10
Your Reference	UNITS	BH203	BH204	BH204	BH204	BH205
Depth		0.9-1.0	0.0-0.2	0.4-0.5	0.8-1.0	0.0-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	0.06
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	0.3
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	92	90	88	85	85

PAHs in Soil						
Our Reference		226390-11	226390-12	226390-13	226390-14	226390-15
Your Reference	UNITS	BH205	BH205	BH205	BH206	BH206
Depth		0.4-0.5	0.9-1.0	1.4-1.5	0.0-0.2	0.4-0.5
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	0.4	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	0.1	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	1.5	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	90	88	88	92	91

PAHs in Soil						
Our Reference		226390-16	226390-17	226390-18	226390-19	226390-20
Your Reference	UNITS	BH207	BH207	BH211	BH211	BH212
Depth		0.4-0.5	0.8-1.0	0.4-0.5	1.6-1.7	0.0-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	0.2	<0.1	0.2
Anthracene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.6	<0.1	0.6
Pyrene	mg/kg	<0.1	<0.1	0.7	<0.1	0.6
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.4	<0.1	0.3
Chrysene	mg/kg	<0.1	<0.1	0.5	<0.1	0.3
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	1	<0.2	0.6
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.61	<0.05	0.4
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	0.3	<0.1	0.2
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	0.5	<0.1	0.3
Total +ve PAH's	mg/kg	<0.05	<0.05	5.1	<0.05	3.6
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	0.8	<0.5	0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	0.9	<0.5	0.6
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	0.9	<0.5	0.6
Surrogate p-Terphenyl-d14	%	87	91	86	85	87

PAHs in Soil						
Our Reference		226390-21	226390-22	226390-23	226390-24	226390-25
Your Reference	UNITS	BH212	BH212	BH214	BH215	BH216
Depth		0.9-1.0	1.9-2.0	0.1-0.2	0.2-0.3	0.1-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.09	<0.05	<0.05	<0.05	0.06
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.75	<0.05	<0.05	<0.05	0.06
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	87	87	87	89	85

PAHs in Soil						
Our Reference		226390-26	226390-27	226390-28	226390-29	226390-30
Your Reference	UNITS	BH217	BH217	BH219	BH220	BH220
Depth		0.2-0.3	0.5-0.6	0.3-0.4	0.1-0.2	0.2-0.3
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.09	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.2	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	110	100	88	86	87

PAHs in Soil						
Our Reference		226390-31	226390-32	226390-33	226390-34	226390-35
Your Reference	UNITS	BH220	BH221	BH222	BH223	BH224
Depth		0.4-0.5	0.4-0.5	0.0-0.1	0.1-0.2	0.3-0.4
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	86	87	94	99	92

PAHs in Soil						
Our Reference		226390-36	226390-37	226390-38	226390-39	226390-40
Your Reference	UNITS	BH225	BD1A/20190916	BD3/20190916	BD1/20190916	BH14
Depth		0.1-0.2	-	-	-	0.3-0.4
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	0.3	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	99	97	99	95	97

Organochlorine Pesticides in soil						
Our Reference		226390-1	226390-3	226390-5	226390-7	226390-10
Your Reference	UNITS	BH201	BH202	BH203	BH204	BH205
Depth		0.0-0.2	0.0-0.2	0.4-0.5	0.0-0.2	0.0-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	95	94	92	94	94

Organochlorine Pesticides in soil						
Our Reference		226390-12	226390-14	226390-16	226390-17	226390-18
Your Reference	UNITS	BH205	BH206	BH207	BH207	BH211
Depth		0.9-1.0	0.0-0.2	0.4-0.5	0.8-1.0	0.4-0.5
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	96	93	94	96	96

Organochlorine Pesticides in soil						
Our Reference		226390-20	226390-21	226390-23	226390-25	226390-26
Your Reference	UNITS	BH212	BH212	BH214	BH216	BH217
Depth		0.0-0.2	0.9-1.0	0.1-0.2	0.1-0.2	0.2-0.3
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	94	79	95	97	92

Organochlorine Pesticides in soil						
Our Reference		226390-28	226390-29	226390-30	226390-31	226390-33
Your Reference	UNITS	BH219	BH220	BH220	BH220	BH222
Depth		0.3-0.4	0.1-0.2	0.2-0.3	0.4-0.5	0.0-0.1
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	95	93	94	93	104

Organochlorine Pesticides in soil		
Our Reference		226390-34
Your Reference	UNITS	BH223
Depth		0.1-0.2
Date Sampled		16/09/2019
Type of sample		soil
Date extracted	-	18/09/2019
Date analysed	-	18/09/2019
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	%	104

Organophosphorus Pesticides						
Our Reference		226390-1	226390-3	226390-5	226390-7	226390-10
Your Reference	UNITS	BH201	BH202	BH203	BH204	BH205
Depth		0.0-0.2	0.0-0.2	0.4-0.5	0.0-0.2	0.0-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	95	94	92	94	94

Organophosphorus Pesticides						
Our Reference		226390-12	226390-14	226390-16	226390-17	226390-18
Your Reference	UNITS	BH205	BH206	BH207	BH207	BH211
Depth		0.9-1.0	0.0-0.2	0.4-0.5	0.8-1.0	0.4-0.5
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	96	93	94	96	96

Organophosphorus Pesticides						
Our Reference		226390-20	226390-21	226390-23	226390-25	226390-26
Your Reference	UNITS	BH212	BH212	BH214	BH216	BH217
Depth		0.0-0.2	0.9-1.0	0.1-0.2	0.1-0.2	0.2-0.3
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	94	79	95	97	92

Organophosphorus Pesticides						
Our Reference		226390-28	226390-29	226390-30	226390-31	226390-33
Your Reference	UNITS	BH219	BH220	BH220	BH220	BH222
Depth		0.3-0.4	0.1-0.2	0.2-0.3	0.4-0.5	0.0-0.1
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	95	93	94	93	104

Organophosphorus Pesticides		
Our Reference		226390-34
Your Reference	UNITS	BH223
Depth		0.1-0.2
Date Sampled		16/09/2019
Type of sample		soil
Date extracted	-	18/09/2019
Date analysed	-	18/09/2019
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	%	104

PCBs in Soil						
Our Reference		226390-1	226390-3	226390-5	226390-7	226390-10
Your Reference	UNITS	BH201	BH202	BH203	BH204	BH205
Depth		0.0-0.2	0.0-0.2	0.4-0.5	0.0-0.2	0.0-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	95	94	92	94	94

PCBs in Soil						
Our Reference		226390-12	226390-14	226390-16	226390-17	226390-18
Your Reference	UNITS	BH205	BH206	BH207	BH207	BH211
Depth		0.9-1.0	0.0-0.2	0.4-0.5	0.8-1.0	0.4-0.5
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	96	93	94	96	96

PCBs in Soil						
Our Reference		226390-20	226390-21	226390-23	226390-25	226390-26
Your Reference	UNITS	BH212	BH212	BH214	BH216	BH217
Depth		0.0-0.2	0.9-1.0	0.1-0.2	0.1-0.2	0.2-0.3
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	94	79	95	97	92

PCBs in Soil						
Our Reference		226390-28	226390-29	226390-30	226390-31	226390-33
Your Reference	UNITS	BH219	BH220	BH220	BH220	BH222
Depth		0.3-0.4	0.1-0.2	0.2-0.3	0.4-0.5	0.0-0.1
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	95	93	94	93	104

PCBs in Soil		
Our Reference		226390-34
Your Reference	UNITS	BH223
Depth		0.1-0.2
Date Sampled		16/09/2019
Type of sample		soil
Date extracted	-	18/09/2019
Date analysed	-	18/09/2019
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 TCMX	%	104

Acid Extractable metals in soil						
Our Reference		226390-1	226390-2	226390-3	226390-4	226390-5
Your Reference	UNITS	BH201	BH201	BH202	BH202	BH203
Depth		0.0-0.2	0.8-1.0	0.0-0.2	0.4-0.45	0.4-0.5
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Arsenic	mg/kg	7	6	<4	5	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	18	15	25	8	9
Copper	mg/kg	18	22	28	18	27
Lead	mg/kg	28	18	37	22	25
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	13	15	20	5	6
Zinc	mg/kg	47	47	28	34	33

Acid Extractable metals in soil						
Our Reference		226390-6	226390-7	226390-8	226390-9	226390-10
Your Reference	UNITS	BH203	BH204	BH204	BH204	BH205
Depth		0.9-1.0	0.0-0.2	0.4-0.5	0.8-1.0	0.0-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Arsenic	mg/kg	5	5	<4	6	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	11	13	8	15	11
Copper	mg/kg	21	21	13	11	19
Lead	mg/kg	10	15	8	19	13
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	7	10	5	7	5
Zinc	mg/kg	29	33	18	13	19

Acid Extractable metals in soil						
Our Reference		226390-11	226390-12	226390-13	226390-14	226390-15
Your Reference	UNITS	BH205	BH205	BH205	BH206	BH206
Depth		0.4-0.5	0.9-1.0	1.4-1.5	0.0-0.2	0.4-0.5
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Arsenic	mg/kg	<4	9	8	<4	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	6	19	15	15	10
Copper	mg/kg	21	11	19	41	31
Lead	mg/kg	19	19	14	12	23
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	9	13	11	7
Zinc	mg/kg	31	29	40	57	51

Acid Extractable metals in soil						
Our Reference		226390-16	226390-17	226390-18	226390-19	226390-20
Your Reference	UNITS	BH207	BH207	BH211	BH211	BH212
Depth		0.4-0.5	0.8-1.0	0.4-0.5	1.6-1.7	0.0-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Arsenic	mg/kg	9	4	6	9	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	11	17	14	13	13
Copper	mg/kg	18	17	23	24	22
Lead	mg/kg	16	17	22	44	27
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	5	9	10	7	12
Zinc	mg/kg	54	39	66	79	47

Acid Extractable metals in soil						
Our Reference		226390-21	226390-22	226390-23	226390-24	226390-25
Your Reference	UNITS	BH212	BH212	BH214	BH215	BH216
Depth		0.9-1.0	1.9-2.0	0.1-0.2	0.2-0.3	0.1-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Arsenic	mg/kg	5	8	6	10	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	12	17	12	7	11
Copper	mg/kg	17	11	29	21	41
Lead	mg/kg	16	18	15	10	150
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	8	3	9	3	48
Zinc	mg/kg	35	15	120	42	680

Acid Extractable metals in soil						
Our Reference		226390-26	226390-27	226390-28	226390-29	226390-30
Your Reference	UNITS	BH217	BH217	BH219	BH220	BH220
Depth		0.2-0.3	0.5-0.6	0.3-0.4	0.1-0.2	0.2-0.3
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Arsenic	mg/kg	8	7	10	<4	8
Cadmium	mg/kg	13	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	38	20	14	79	14
Copper	mg/kg	230	19	16	25	13
Lead	mg/kg	280	27	12	4	15
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	15	11	13	95	6
Zinc	mg/kg	3,100	130	43	53	24

Acid Extractable metals in soil						
Our Reference		226390-31	226390-32	226390-33	226390-34	226390-35
Your Reference	UNITS	BH220	BH221	BH222	BH223	BH224
Depth		0.4-0.5	0.4-0.5	0.0-0.1	0.1-0.2	0.3-0.4
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Arsenic	mg/kg	7	4	<4	<4	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	18	18	4	3	9
Copper	mg/kg	11	20	59	110	25
Lead	mg/kg	19	14	5	3	8
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	6	8	7	6	5
Zinc	mg/kg	17	33	640	710	36

Acid Extractable metals in soil						
Our Reference		226390-36	226390-37	226390-38	226390-39	226390-40
Your Reference	UNITS	BH225	BD1A/20190916	BD3/20190916	BD1/20190916	BH14
Depth		0.1-0.2	-	-	-	0.3-0.4
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Arsenic	mg/kg	<4	<4	8	6	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	78	14	13	14	14
Copper	mg/kg	87	23	17	22	24
Lead	mg/kg	9	16	15	25	15
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	38	9	4	12	7
Zinc	mg/kg	910	57	36	52	57

Misc Soil - Inorg						
Our Reference		226390-1	226390-3	226390-5	226390-7	226390-10
Your Reference	UNITS	BH201	BH202	BH203	BH204	BH205
Depth		0.0-0.2	0.0-0.2	0.4-0.5	0.0-0.2	0.0-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference		226390-12	226390-14	226390-16	226390-17	226390-18
Your Reference	UNITS	BH205	BH206	BH207	BH207	BH211
Depth		0.9-1.0	0.0-0.2	0.4-0.5	0.8-1.0	0.4-0.5
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference		226390-20	226390-23	226390-25	226390-26	226390-29
Your Reference	UNITS	BH212	BH214	BH216	BH217	BH220
Depth		0.0-0.2	0.1-0.2	0.1-0.2	0.2-0.3	0.1-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg					
Our Reference		226390-30	226390-31	226390-33	226390-34
Your Reference	UNITS	BH220	BH220	BH222	BH223
Depth		0.2-0.3	0.4-0.5	0.0-0.1	0.1-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil
Date prepared	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5

Moisture						
Our Reference		226390-1	226390-2	226390-3	226390-4	226390-5
Your Reference	UNITS	BH201	BH201	BH202	BH202	BH203
Depth		0.0-0.2	0.8-1.0	0.0-0.2	0.4-0.45	0.4-0.5
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Moisture	%	22	16	2.7	12	11

Moisture						
Our Reference		226390-6	226390-7	226390-8	226390-9	226390-10
Your Reference	UNITS	BH203	BH204	BH204	BH204	BH205
Depth		0.9-1.0	0.0-0.2	0.4-0.5	0.8-1.0	0.0-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Moisture	%	19	15	15	11	7.1

Moisture						
Our Reference		226390-11	226390-12	226390-13	226390-14	226390-15
Your Reference	UNITS	BH205	BH205	BH205	BH206	BH206
Depth		0.4-0.5	0.9-1.0	1.4-1.5	0.0-0.2	0.4-0.5
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Moisture	%	15	18	18	5.7	10

Moisture						
Our Reference		226390-16	226390-17	226390-18	226390-19	226390-20
Your Reference	UNITS	BH207	BH207	BH211	BH211	BH212
Depth		0.4-0.5	0.8-1.0	0.4-0.5	1.6-1.7	0.0-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Moisture	%	17	19	14	22	11

Moisture						
Our Reference		226390-21	226390-22	226390-23	226390-24	226390-25
Your Reference	UNITS	BH212	BH212	BH214	BH215	BH216
Depth		0.9-1.0	1.9-2.0	0.1-0.2	0.2-0.3	0.1-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Moisture	%	16	21	18	19	6.1

Moisture						
Our Reference		226390-26	226390-27	226390-28	226390-29	226390-30
Your Reference	UNITS	BH217	BH217	BH219	BH220	BH220
Depth		0.2-0.3	0.5-0.6	0.3-0.4	0.1-0.2	0.2-0.3
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Moisture	%	21	17	17	16	18

Moisture						
Our Reference		226390-31	226390-32	226390-33	226390-34	226390-35
Your Reference	UNITS	BH220	BH221	BH222	BH223	BH224
Depth		0.4-0.5	0.4-0.5	0.0-0.1	0.1-0.2	0.3-0.4
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Moisture	%	17	18	22	36	21

Moisture						
Our Reference		226390-36	226390-37	226390-38	226390-39	226390-40
Your Reference	UNITS	BH225	BD1A/20190916	BD3/20190916	BD1/20190916	BH14
Depth		0.1-0.2	-	-	-	0.3-0.4
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Moisture	%	15	21	12	19	19

Asbestos ID - soils						
Our Reference		226390-1	226390-2	226390-3	226390-4	226390-5
Your Reference	UNITS	BH201	BH201	BH202	BH202	BH203
Depth		0.0-0.2	0.8-1.0	0.0-0.2	0.4-0.45	0.4-0.5
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Sample mass tested	g	Approx. 30g	Approx. 30g	Approx. 40g	Approx. 35g	Approx. 35g
Sample Description	-	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		226390-6	226390-7	226390-8	226390-9	226390-10
Your Reference	UNITS	BH203	BH204	BH204	BH204	BH205
Depth		0.9-1.0	0.0-0.2	0.4-0.5	0.8-1.0	0.0-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Sample mass tested	g	Approx. 35g	Approx. 25g	Approx. 25g	Approx. 30g	Approx. 40g
Sample Description	-	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		226390-11	226390-12	226390-13	226390-14	226390-15
Your Reference	UNITS	BH205	BH205	BH205	BH206	BH206
Depth		0.4-0.5	0.9-1.0	1.4-1.5	0.0-0.2	0.4-0.5
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Sample mass tested	g	Approx. 30g	Approx. 35g	Approx. 30g	Approx. 35g	Approx. 40g
Sample Description	-	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		226390-16	226390-17	226390-18	226390-19	226390-20
Your Reference	UNITS	BH207	BH207	BH211	BH211	BH212
Depth		0.4-0.5	0.8-1.0	0.4-0.5	1.6-1.7	0.0-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Sample mass tested	g	Approx. 30g	Approx. 30g	Approx. 40g	Approx. 30g	Approx. 35g
Sample Description	-	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		226390-21	226390-22	226390-23	226390-24	226390-25
Your Reference	UNITS	BH212	BH212	BH214	BH215	BH216
Depth		0.9-1.0	1.9-2.0	0.1-0.2	0.2-0.3	0.1-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Sample mass tested	g	Approx. 35g	Approx. 30g	Approx. 30g	Approx. 30g	Approx. 35g
Sample Description	-	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		226390-26	226390-27	226390-28	226390-29	226390-30
Your Reference	UNITS	BH217	BH217	BH219	BH220	BH220
Depth		0.2-0.3	0.5-0.6	0.3-0.4	0.1-0.2	0.2-0.3
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Sample mass tested	g	Approx. 20g	Approx. 25g	Approx. 40g	Approx. 40g	Approx. 25g
Sample Description	-	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		226390-31	226390-32	226390-33	226390-34	226390-35
Your Reference	UNITS	BH220	BH221	BH222	BH223	BH224
Depth		0.4-0.5	0.4-0.5	0.0-0.1	0.1-0.2	0.3-0.4
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Sample mass tested	g	Approx. 25g	Approx. 25g	Approx. 10g	Approx. 10g	Approx. 30g
Sample Description	-	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		226390-36	226390-37	226390-38	226390-39	226390-40
Your Reference	UNITS	BH225	BD1A/20190916	BD3/20190916	BD1/20190916	BH14
Depth		0.1-0.2	-	-	-	0.3-0.4
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Sample mass tested	g	Approx. 15g	Approx. 30g	Approx. 30g	Approx. 30g	Approx. 35g
Sample Description	-	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Misc Inorg - Soil						
Our Reference		226390-14	226390-18	226390-20	226390-23	226390-26
Your Reference	UNITS	BH206	BH211	BH212	BH214	BH217
Depth		0.0-0.2	0.4-0.5	0.0-0.2	0.1-0.2	0.2-0.3
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
pH 1:5 soil:water	pH Units	[NA]	8.0	[NA]	7.7	8.2
Ammonia as N in soil	mg/kg	3.5	[NA]	0.5	[NA]	3.1

Misc Inorg - Soil						
Our Reference		226390-28	226390-30	226390-31	226390-33	226390-34
Your Reference	UNITS	BH219	BH220	BH220	BH222	BH223
Depth		0.3-0.4	0.2-0.3	0.4-0.5	0.0-0.1	0.1-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
pH 1:5 soil:water	pH Units	4.5	[NA]	[NA]	[NA]	[NA]
Ammonia as N in soil	mg/kg	35	24	0.8	150	61

Misc Inorg - Soil		
Our Reference		226390-36
Your Reference	UNITS	BH225
Depth		0.1-0.2
Date Sampled		16/09/2019
Type of sample		soil
Date prepared	-	19/09/2019
Date analysed	-	19/09/2019
pH 1:5 soil:water	pH Units	6.8

CEC						
Our Reference		226390-18	226390-23	226390-26	226390-28	226390-36
Your Reference	UNITS	BH211	BH214	BH217	BH219	BH225
Depth		0.4-0.5	0.1-0.2	0.2-0.3	0.3-0.4	0.1-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Exchangeable Ca	meq/100g	11	17	21	2.9	62
Exchangeable K	meq/100g	0.4	5.6	1.5	1.4	3.9
Exchangeable Mg	meq/100g	4.8	4.1	4.1	2.7	11
Exchangeable Na	meq/100g	0.27	0.29	0.49	0.27	1.4
Cation Exchange Capacity	meq/100g	17	27	27	7.3	78

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-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
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.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a KCl extraction.
Metals-009	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-AES analytical finish.
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.

Method ID	Methodology Summary
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. 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-11	[NT]
Date extracted	-			18/09/2019	31	18/09/2019	18/09/2019		18/09/2019	[NT]
Date analysed	-			19/09/2019	31	19/09/2019	19/09/2019		19/09/2019	[NT]
Dichlorodifluoromethane	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
Chloromethane	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
Vinyl Chloride	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
Bromomethane	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
Chloroethane	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
Trichlorofluoromethane	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
1,1-Dichloroethene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
trans-1,2-dichloroethene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
1,1-dichloroethane	mg/kg	1	Org-014	<1	31	<1	<1	0	87	[NT]
cis-1,2-dichloroethene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
bromochloromethane	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
chloroform	mg/kg	1	Org-014	<1	31	<1	<1	0	85	[NT]
2,2-dichloropropane	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
1,2-dichloroethane	mg/kg	1	Org-014	<1	31	<1	<1	0	84	[NT]
1,1,1-trichloroethane	mg/kg	1	Org-014	<1	31	<1	<1	0	80	[NT]
1,1-dichloropropene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
Cyclohexane	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
carbon tetrachloride	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-014	<0.2	31	<0.2	<0.2	0	[NT]	[NT]
dibromomethane	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
1,2-dichloropropane	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
trichloroethene	mg/kg	1	Org-014	<1	31	<1	<1	0	84	[NT]
bromodichloromethane	mg/kg	1	Org-014	<1	31	<1	<1	0	76	[NT]
trans-1,3-dichloropropene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
cis-1,3-dichloropropene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
1,1,2-trichloroethane	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-014	<0.5	31	<0.5	<0.5	0	[NT]	[NT]
1,3-dichloropropane	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
dibromochloromethane	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
1,2-dibromoethane	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
tetrachloroethene	mg/kg	1	Org-014	<1	31	<1	<1	0	84	[NT]
1,1,1,2-tetrachloroethane	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
chlorobenzene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
bromoform	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-014	<2	31	<2	<2	0	[NT]	[NT]
styrene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	[NT]
o-Xylene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
1,2,3-trichloropropane	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
isopropylbenzene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
bromobenzene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
n-propyl benzene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
2-chlorotoluene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
4-chlorotoluene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
1,3,5-trimethyl benzene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
tert-butyl benzene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
1,2,4-trimethyl benzene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
1,3-dichlorobenzene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
sec-butyl benzene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
1,4-dichlorobenzene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
4-isopropyl toluene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
1,2-dichlorobenzene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
n-butyl benzene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
1,2-dibromo-3-chloropropane	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
1,2,4-trichlorobenzene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
hexachlorobutadiene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
1,2,3-trichlorobenzene	mg/kg	1	Org-014	<1	31	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluorometha	%		Org-014	100	31	101	101	0	100	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-014	110	31	89	101	13	92	[NT]
Surrogate Toluene-d_8	%		Org-014	97	31	97	97	0	95	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-014	91	31	91	95	4	94	[NT]

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	[NT]
Date extracted	-			[NT]	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Date analysed	-			[NT]	[NT]	[NT]	[NT]	[NT]	19/09/2019	[NT]
1,1-dichloroethane	mg/kg	1	Org-014	[NT]	[NT]	[NT]	[NT]	[NT]	94	[NT]
chloroform	mg/kg	1	Org-014	[NT]	[NT]	[NT]	[NT]	[NT]	92	[NT]
1,2-dichloroethane	mg/kg	1	Org-014	[NT]	[NT]	[NT]	[NT]	[NT]	91	[NT]
1,1,1-trichloroethane	mg/kg	1	Org-014	[NT]	[NT]	[NT]	[NT]	[NT]	84	[NT]
trichloroethene	mg/kg	1	Org-014	[NT]	[NT]	[NT]	[NT]	[NT]	89	[NT]
bromodichloromethane	mg/kg	1	Org-014	[NT]	[NT]	[NT]	[NT]	[NT]	83	[NT]
dibromochloromethane	mg/kg	1	Org-014	[NT]	[NT]	[NT]	[NT]	[NT]	75	[NT]
tetrachloroethene	mg/kg	1	Org-014	[NT]	[NT]	[NT]	[NT]	[NT]	90	[NT]
Surrogate Dibromofluorometha	%		Org-014	[NT]	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-014	[NT]	[NT]	[NT]	[NT]	[NT]	98	[NT]
Surrogate Toluene-d_8	%		Org-014	[NT]	[NT]	[NT]	[NT]	[NT]	97	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-014	[NT]	[NT]	[NT]	[NT]	[NT]	92	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	226390-3
Date extracted	-			18/09/2019	1	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Date analysed	-			19/09/2019	1	19/09/2019	19/09/2019		19/09/2019	19/09/2019
TRH C_6 - C_9	mg/kg	25	Org-016	<25	1	<25	<25	0	84	89
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	1	<25	<25	0	84	89
Benzene	mg/kg	0.2	Org-016	<0.2	1	<0.2	<0.2	0	82	87
Toluene	mg/kg	0.5	Org-016	<0.5	1	<0.5	<0.5	0	81	86
Ethylbenzene	mg/kg	1	Org-016	<1	1	<1	<1	0	85	90
m+p-xylene	mg/kg	2	Org-016	<2	1	<2	<2	0	85	91
o-Xylene	mg/kg	1	Org-016	<1	1	<1	<1	0	82	88
naphthalene	mg/kg	1	Org-014	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	110	1	87	93	7	92	95

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	226390-22
Date extracted	-			[NT]	12	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Date analysed	-			[NT]	12	19/09/2019	19/09/2019		19/09/2019	19/09/2019
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	12	<25	<25	0	90	91
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	12	<25	<25	0	90	91
Benzene	mg/kg	0.2	Org-016	[NT]	12	<0.2	<0.2	0	89	87
Toluene	mg/kg	0.5	Org-016	[NT]	12	<0.5	<0.5	0	87	87
Ethylbenzene	mg/kg	1	Org-016	[NT]	12	<1	<1	0	91	93
m+p-xylene	mg/kg	2	Org-016	[NT]	12	<2	<2	0	92	94
o-Xylene	mg/kg	1	Org-016	[NT]	12	<1	<1	0	88	90
naphthalene	mg/kg	1	Org-014	[NT]	12	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	12	88	93	6	98	93

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	18/09/2019	18/09/2019		[NT]	[NT]
Date analysed	-			[NT]	21	19/09/2019	19/09/2019		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	21	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	21	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-016	[NT]	21	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-016	[NT]	21	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-016	[NT]	21	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-016	[NT]	21	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-016	[NT]	21	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-014	[NT]	21	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	21	85	92	8	[NT]	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	18/09/2019	18/09/2019		[NT]	[NT]
Date analysed	-			[NT]	31	19/09/2019	19/09/2019		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	31	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	31	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-016	[NT]	31	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-016	[NT]	31	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-016	[NT]	31	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-016	[NT]	31	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-016	[NT]	31	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-014	[NT]	31	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	31	89	101	13	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	226390-3
Date extracted	-			18/09/2019	1	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Date analysed	-			19/09/2019	1	18/09/2019	18/09/2019		18/09/2019	19/09/2019
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	1	<50	<50	0	90	103
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	1	<100	<100	0	86	86
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	1	<100	<100	0	91	#
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	1	<50	<50	0	90	103
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	1	<100	<100	0	86	86
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	1	<100	<100	0	91	#
Surrogate o-Terphenyl	%		Org-003	89	1	84	82	2	96	104

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	226390-22
Date extracted	-			[NT]	12	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Date analysed	-			[NT]	12	19/09/2019	19/09/2019		19/09/2019	19/09/2019
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	12	<50	<50	0	99	92
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	12	<100	<100	0	93	87
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	12	<100	<100	0	121	110
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	12	<50	<50	0	99	92
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	12	<100	<100	0	93	87
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	12	<100	<100	0	121	110
Surrogate o-Terphenyl	%		Org-003	[NT]	12	85	86	1	101	97

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	18/09/2019	18/09/2019		[NT]	[NT]
Date analysed	-			[NT]	21	19/09/2019	19/09/2019		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	21	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	21	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	21	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	21	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	21	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	21	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-003	[NT]	21	88	86	2	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	18/09/2019	18/09/2019		[NT]	[NT]
Date analysed	-			[NT]	31	19/09/2019	19/09/2019		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	31	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	31	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	31	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	31	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	31	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	31	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-003	[NT]	31	86	84	2	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	226390-3
Date extracted	-			18/09/2019	1	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Date analysed	-			19/09/2019	1	19/09/2019	19/09/2019		19/09/2019	19/09/2019
Naphthalene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	106	102
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	100	96
Phenanthrene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	96	#
Anthracene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	1	0.1	0.2	67	98	#
Pyrene	mg/kg	0.1	Org-012	<0.1	1	0.1	0.2	67	102	#
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	100	#
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	1	<0.05	<0.05	0	100	#
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	91	1	85	90	6	91	89

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	226390-22
Date extracted	-			[NT]	12	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Date analysed	-			[NT]	12	19/09/2019	19/09/2019		19/09/2019	19/09/2019
Naphthalene	mg/kg	0.1	Org-012	[NT]	12	<0.1	<0.1	0	108	106
Acenaphthylene	mg/kg	0.1	Org-012	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	[NT]	12	<0.1	<0.1	0	98	98
Phenanthrene	mg/kg	0.1	Org-012	[NT]	12	<0.1	<0.1	0	100	92
Anthracene	mg/kg	0.1	Org-012	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	[NT]	12	<0.1	<0.1	0	98	94
Pyrene	mg/kg	0.1	Org-012	[NT]	12	<0.1	<0.1	0	102	98
Benzo(a)anthracene	mg/kg	0.1	Org-012	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	[NT]	12	<0.1	<0.1	0	104	100
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	[NT]	12	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	[NT]	12	<0.05	<0.05	0	110	106
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	[NT]	12	88	87	1	91	88

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	18/09/2019	18/09/2019		[NT]	[NT]
Date analysed	-			[NT]	21	19/09/2019	19/09/2019		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-012	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-012	[NT]	21	0.2	<0.1	67	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-012	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	[NT]	21	0.2	<0.1	67	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-012	[NT]	21	0.2	<0.1	67	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	[NT]	21	0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	[NT]	21	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	[NT]	21	0.09	<0.05	57	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	[NT]	21	87	85	2	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	18/09/2019	18/09/2019		[NT]	[NT]
Date analysed	-			[NT]	31	19/09/2019	19/09/2019		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-012	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-012	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-012	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-012	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	[NT]	31	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	[NT]	31	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	[NT]	31	86	83	4	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	226390-3
Date extracted	-			18/09/2019	1	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Date analysed	-			18/09/2019	1	18/09/2019	18/09/2019		18/09/2019	18/09/2019
HCB	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	98	95
gamma-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	96	88
Heptachlor	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	92	89
delta-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	98	95
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	101	95
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	99	92
Dieldrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	118	108
Endrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	100	98
pp-DDD	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	95	87
Endosulfan II	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	112	102
Methoxychlor	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	97	1	95	95	0	92	89

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	[NT]
Date extracted	-			[NT]	12	18/09/2019	18/09/2019		18/09/2019	[NT]
Date analysed	-			[NT]	12	18/09/2019	18/09/2019		18/09/2019	[NT]
HCB	mg/kg	0.1	Org-005	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	[NT]	12	<0.1	<0.1	0	95	[NT]
gamma-BHC	mg/kg	0.1	Org-005	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	[NT]	12	<0.1	<0.1	0	91	[NT]
Heptachlor	mg/kg	0.1	Org-005	[NT]	12	<0.1	<0.1	0	72	[NT]
delta-BHC	mg/kg	0.1	Org-005	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	[NT]	12	<0.1	<0.1	0	96	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	[NT]	12	<0.1	<0.1	0	96	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	[NT]	12	<0.1	<0.1	0	95	[NT]
Dieldrin	mg/kg	0.1	Org-005	[NT]	12	<0.1	<0.1	0	112	[NT]
Endrin	mg/kg	0.1	Org-005	[NT]	12	<0.1	<0.1	0	89	[NT]
pp-DDD	mg/kg	0.1	Org-005	[NT]	12	<0.1	<0.1	0	87	[NT]
Endosulfan II	mg/kg	0.1	Org-005	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	[NT]	12	<0.1	<0.1	0	93	[NT]
Methoxychlor	mg/kg	0.1	Org-005	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	[NT]	12	96	93	3	92	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	18/09/2019	18/09/2019		[NT]	[NT]
Date analysed	-			[NT]	21	18/09/2019	18/09/2019		[NT]	[NT]
HCB	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-005	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	[NT]	21	79	86	8	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	18/09/2019	18/09/2019		[NT]	[NT]
Date analysed	-			[NT]	31	18/09/2019	18/09/2019		[NT]	[NT]
HCB	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-005	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	[NT]	31	93	94	1	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	226390-3
Date extracted	-			18/09/2019	1	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Date analysed	-			18/09/2019	1	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	95	86
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	100	102
Dimethoate	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	86	87
Fenitrothion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	106	96
Malathion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	110	86
Parathion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	102	68
Ronnel	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	94	88
Surrogate TCMX	%		Org-008	97	1	95	95	0	92	89

QUALITY CONTROL: Organophosphorus Pesticides						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	[NT]
Date extracted	-			[NT]	12	18/09/2019	18/09/2019		18/09/2019	[NT]
Date analysed	-			[NT]	12	18/09/2019	18/09/2019		18/09/2019	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	[NT]	12	<0.1	<0.1	0	94	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	[NT]	12	<0.1	<0.1	0	106	[NT]
Dimethoate	mg/kg	0.1	Org-008	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	[NT]	12	<0.1	<0.1	0	82	[NT]
Fenitrothion	mg/kg	0.1	Org-008	[NT]	12	<0.1	<0.1	0	100	[NT]
Malathion	mg/kg	0.1	Org-008	[NT]	12	<0.1	<0.1	0	106	[NT]
Parathion	mg/kg	0.1	Org-008	[NT]	12	<0.1	<0.1	0	106	[NT]
Ronnel	mg/kg	0.1	Org-008	[NT]	12	<0.1	<0.1	0	95	[NT]
Surrogate TCMX	%		Org-008	[NT]	12	96	93	3	92	[NT]

QUALITY CONTROL: Organophosphorus Pesticides						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	18/09/2019	18/09/2019		[NT]	[NT]
Date analysed	-			[NT]	21	18/09/2019	18/09/2019		[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-008	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-008	[NT]	21	79	86	8	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	18/09/2019	18/09/2019		[NT]	[NT]
Date analysed	-			[NT]	31	18/09/2019	18/09/2019		[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-008	[NT]	31	93	94	1	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	226390-3
Date extracted	-			18/09/2019	1	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Date analysed	-			18/09/2019	1	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	103	105
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	97	1	95	95	0	92	89

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	[NT]
Date extracted	-			[NT]	12	18/09/2019	18/09/2019		18/09/2019	[NT]
Date analysed	-			[NT]	12	18/09/2019	18/09/2019		18/09/2019	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	12	<0.1	<0.1	0	104	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	[NT]	12	96	93	3	92	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	18/09/2019	18/09/2019		[NT]	[NT]
Date analysed	-			[NT]	21	18/09/2019	18/09/2019		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	[NT]	21	79	86	8	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	18/09/2019	18/09/2019		[NT]	[NT]
Date analysed	-			[NT]	31	18/09/2019	18/09/2019		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	[NT]	31	93	94	1	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	226390-3
Date prepared	-			18/09/2019	1	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Date analysed	-			18/09/2019	1	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Arsenic	mg/kg	4	Metals-020	<4	1	7	7	0	106	86
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	101	79
Chromium	mg/kg	1	Metals-020	<1	1	18	19	5	112	117
Copper	mg/kg	1	Metals-020	<1	1	18	17	6	104	102
Lead	mg/kg	1	Metals-020	<1	1	28	28	0	107	97
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	89	103
Nickel	mg/kg	1	Metals-020	<1	1	13	13	0	100	107
Zinc	mg/kg	1	Metals-020	<1	1	47	49	4	103	100

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	226390-22
Date prepared	-			[NT]	12	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Date analysed	-			[NT]	12	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Arsenic	mg/kg	4	Metals-020	[NT]	12	9	8	12	101	77
Cadmium	mg/kg	0.4	Metals-020	[NT]	12	<0.4	<0.4	0	96	83
Chromium	mg/kg	1	Metals-020	[NT]	12	19	17	11	104	78
Copper	mg/kg	1	Metals-020	[NT]	12	11	11	0	100	88
Lead	mg/kg	1	Metals-020	[NT]	12	19	20	5	104	79
Mercury	mg/kg	0.1	Metals-021	[NT]	12	<0.1	<0.1	0	90	86
Nickel	mg/kg	1	Metals-020	[NT]	12	9	9	0	95	81
Zinc	mg/kg	1	Metals-020	[NT]	12	29	35	19	100	83

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	21	18/09/2019	18/09/2019		[NT]	[NT]
Date analysed	-			[NT]	21	18/09/2019	18/09/2019		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	21	5	6	18	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	21	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	21	12	12	0	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	21	17	28	49	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	21	16	23	36	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	21	8	10	22	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	21	35	53	41	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	31	18/09/2019	18/09/2019		[NT]	[NT]
Date analysed	-			[NT]	31	18/09/2019	18/09/2019		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	31	7	7	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	31	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	31	18	19	5	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	31	11	11	0	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	31	19	18	5	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	31	6	5	18	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	31	17	17	0	[NT]	[NT]

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	226390-3
Date prepared	-			19/09/2019	1	19/09/2019	19/09/2019		19/09/2019	19/09/2019
Date analysed	-			19/09/2019	1	19/09/2019	19/09/2019		19/09/2019	19/09/2019
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	1	<5	<5	0	101	98

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	20	19/09/2019	19/09/2019		[NT]	[NT]
Date analysed	-			[NT]	20	19/09/2019	19/09/2019		[NT]	[NT]
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	[NT]	20	<5	<5	0	[NT]	[NT]

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	[NT]
Date prepared	-			19/09/2019	18	19/09/2019	19/09/2019		19/09/2019	[NT]
Date analysed	-			19/09/2019	18	19/09/2019	19/09/2019		19/09/2019	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	18	8.0	8.1	1	102	[NT]
Ammonia as N in soil	mg/kg	0.5	Inorg-057	<0.5	28	35	35	0	94	[NT]

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	28	19/09/2019	19/09/2019		[NT]	[NT]
Date analysed	-			[NT]	28	19/09/2019	19/09/2019		[NT]	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	28	4.5	[NT]		[NT]	[NT]

QUALITY CONTROL: CEC						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	[NT]
Date prepared	-			19/09/2019	[NT]	[NT]	[NT]	[NT]	19/09/2019	[NT]
Date analysed	-			19/09/2019	[NT]	[NT]	[NT]	[NT]	19/09/2019	[NT]
Exchangeable Ca	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Exchangeable K	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Exchangeable Mg	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Exchangeable Na	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	[NT]	[NT]	107	[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.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Report Comments

PAHs in Soil - # Percent recovery for the matrix spike is not possible to report as the high concentration of analytes in sample 226390-3 has caused interference.

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: Samples were sub-sampled from jars provided by the client.

TRH Soil C10-C40 NEPM - # Percent recovery for the surrogate/matrix spike is not possible to report as the high concentration of analytes in sample 226390-3 have caused interference.

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SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Pty Ltd
Attention	Paul Gorman

Sample Login Details

Your reference	84822.02, Eastern Creek
Envirolab Reference	226390
Date Sample Received	18/09/2019
Date Instructions Received	18/09/2019
Date Results Expected to be Reported	19/09/2019

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	40 soil
Turnaround Time Requested	1 day
Temperature on Receipt (°C)	16.2
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	Organochlorine Pesticidesin soil	Organophosphorus Pesticides	PCBsin Soil	Acid Extractable metalsin soil	Misc Soil - Inorg	Asbestos ID - soils	Misc Inorg - Soil	CEC
BH201-0.0-0.2		✓	✓	✓	✓	✓	✓	✓	✓	✓		
BH201-0.8-1.0		✓	✓	✓				✓		✓		
BH202-0.0-0.2		✓	✓	✓	✓	✓	✓	✓	✓	✓		
BH202-0.4-0.45		✓	✓	✓				✓		✓		
BH203-0.4-0.5		✓	✓	✓	✓	✓	✓	✓	✓	✓		
BH203-0.9-1.0		✓	✓	✓				✓		✓		
BH204-0.0-0.2		✓	✓	✓	✓	✓	✓	✓	✓	✓		
BH204-0.4-0.5		✓	✓	✓				✓		✓		
BH204-0.8-1.0		✓	✓	✓				✓		✓		
BH205-0.0-0.2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
BH205-0.4-0.5		✓	✓	✓				✓		✓		
BH205-0.9-1.0		✓	✓	✓	✓	✓	✓	✓	✓	✓		
BH205-1.4-1.5		✓	✓	✓				✓		✓		
BH206-0.0-0.2		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH206-0.4-0.5		✓	✓	✓				✓		✓		
BH207-0.4-0.5		✓	✓	✓	✓	✓	✓	✓	✓	✓		
BH207-0.8-1.0		✓	✓	✓	✓	✓	✓	✓	✓	✓		
BH211-0.4-0.5		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH211-1.6-1.7		✓	✓	✓				✓		✓		
BH212-0.0-0.2		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH212-0.9-1.0		✓	✓	✓	✓	✓	✓	✓		✓		
BH212-1.9-2.0		✓	✓	✓				✓		✓		
BH214-0.1-0.2		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH215-0.2-0.3		✓	✓	✓				✓		✓		
BH216-0.1-0.2		✓	✓	✓	✓	✓	✓	✓	✓	✓		
BH217-0.2-0.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH217-0.5-0.6		✓	✓	✓				✓		✓		
BH219-0.3-0.4	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
BH220-0.1-0.2		✓	✓	✓	✓	✓	✓	✓	✓	✓		
BH220-0.2-0.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH220-0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH221-0.4-0.5		✓	✓	✓				✓		✓		

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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	Asbestos ID - soils	Misc Inorg - Soil	CEC
BH222-0.0-0.1		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH223-0.1-0.2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH224-0.3-0.4		✓	✓	✓				✓		✓		
BH225-0.1-0.2		✓	✓	✓				✓		✓	✓	✓
BD1A/20190916		✓	✓	✓				✓		✓		
BD3/20190916		✓	✓	✓				✓		✓		
BD1/20190916		✓	✓	✓				✓		✓		
BH14-0.3-0.4		✓	✓	✓				✓		✓		

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.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No: 84822.02	**Suburb:** Eastern Creek	**To:** Lab name	
Project Name: Green Waratah	**Order Number**		
Project Manager: JS	**Sampler:** JS	**Attn:**	
Emails: el.james-hall;jack.snowden@douglaspartners.com, paul.gorman@douglaspartners.com.au		**Phone:**	
Date Required: 24 hr TAT		**Email:**	
Prior Storage: ☐ Eski	Do samples contain 'potential' HBM? Yes ☐	No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)	

Sample ID	Lab ID	Date Sampled	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: combo 8a	combo 3a	OCP/OPP/PCB	VOC	Ph & cec	Ammonia				Notes/preservation
BH201 0.0-0.2	1	16/09/19	S	G	X									
BH201 0.8-1.0	2	16/09/19	S	G		X								
BH202 0.0-0.2	3	16/09/19	S	G	X									
BH202 0.4-0.45	4	16/09/19	S	G		X								
BH203 0.4-0.5	5	16/09/19	S	G	X									
BH203 0.9-1.0	6	16/09/19	S	G		X								
BH204 0.0-0.2	7	16/09/19	S	G	X									
BH204 0.4-0.5	8	16/09/19	S	G		X								
BH204 0.8-1.0	9	16/09/19	S	G		X								
BH205 0.0-0.2	10	16/09/19	S	G	X		X	X						
BH205 0.4-0.5	11	16/09/19	S	G		X								
BH205 0.9-1.0	12	16/09/19	S	G	X									
BH205 1.4-1.5	13	16/09/19	S	G		X								
BH206 0.0-0.2	14	16/09/19	S	G	X					X				
BH206 0.4-0.5	15	16/09/19	S	G		X								
PQL (S) mg/kg														**ANZECC PQLs req'd for all water analytes** ☐

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 226390
~~Date Received:~~ 18/09/19
Time Received: 1325
Received by: SB
Temp: Cool/Ambient
Cooling: Ice/Icepack
~~Security: Intact/Broken/None~~

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Lab Report/Reference No: 226390

Total number of samples in container: **Relinquished by:** **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd **Address:** **Phone:** **Fax:**

Signed: JS **Received by:** S. Bolton **Date & Time:** 18/09/19 1325

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	84822.02	**Suburb:**	Eastern Creek	**To:**	Lab name
Project Name:	Green Waratah	**Order Number**			
Project Manager:	JS	**Sampler:**	JS	**Attn:**	
Emails:	l.james-hall;jack.snowden@douglaspartners.com,	paul.gorman@douglaspartners.com.au		**Phone:**	
Date Required:	24 hr TAT			**Email:**	
Prior Storage:	☐ Eski	Do samples contain 'potential' HBM?	Yes ☐	No ☐	(If YES, then handle, transport and store in accordance with FPM HAZID)

Sample ID	Lab ID	Sampling Date	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes									Notes/preservation
					combo 8a	combo 3a	OCP/OPP/PCB	VOC	Ph & cec	Ammonia				
BH207 0.4-0.5	16	16/09/19	S	G	X		X							
BH207 0.8-1.0	17	16/09/19	S	G	X									
BH211 0.4-0.5	18	16/09/19	S	G	X				X					
BH211 1.6-1.7	19	16/09/19	S	G		X								
BH212 0.0-0.2	20	16/09/19	S	G	X					X				
BH212 0.9-1.0	21	16/09/19	S	G		X	X							
BH212 1.9-2.0	22	16/09/19	S	G		X								
BH214 0.1-0.2	23	16/09/19	S	G	X				X					
BH215 0.2-0.3	24	16/09/19	S	G		X								
BH216 0.1-0.2	25	16/09/19	S	G	X		X							
BH217 0.2-0.3	26	16/09/19	S	G	X		X	X	X	X				
BH217 0.5-0.6	27	16/09/19	S	G		X								
BH219 0.3-0.4	28	16/09/19	S	G		X	X	X	X	X				
BH220 0.1-0.2	29	16/09/19	S	G	X									
BH220 0.2-0.3	30	16/09/19	S	G	X		X	X		X				
PQL (S) mg/kg														**ANZECC PQLs req'd for all water analytes** ☐

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Lab Report/Reference No: 226390

Total number of samples in container:	**Relinquished by:**	**Transported to laboratory by:**	
Send Results to: Douglas Partners Pty Ltd	**Address:**	**Phone:**	**Fax:**
Signed:	**Received by:** S. Bolton	**Date & Time:** 18/09/19 1325	

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	84822.02	**Suburb:**	Eastern Creek	**To:**	Lab name
Project Name:	Green Waratah	**Order Number**			
Project Manager:	JS	**Sampler:**	JS	**Attn:**	
Emails:	el.james-hall;jack.snowden@douglaspartners.com, paul.gorman@douglaspartners.com.au			**Phone:**	
Date Required:	24 hr TAT			**Email:**	
Prior Storage:	☐ Eski	Do samples contain 'potential' HBM?	Yes ☐	No ☐	(If YES, then handle, transport and store in accordance with FPM HAZID)

Sample ID	Lab ID	Sampling Date	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes									Notes/preservation
					combo 8a	combo 3a	OCP/OPP/PCB	VOC	Ph & cec	Ammonia				
BH220 0.4-0.5	31	16/09/19	S	G	X		X	X		X				
BH221 0.4-0.5	32	16/09/19	S	G		X								
BH222 0.0-0.1	33	16/09/19	S	G	X					X				
BH223 0.1-0.2	34	16/09/19	S	G	X			X		X				
BH224 0.3-0.4	35	16/09/19	S	G		X								
BH225 0.1-0.2	36	16/09/19	S	G		X			X					
BD2/20190916	—	16/09/19	S	G		X								SEND TO ALS
BD1A/20190916	37	16/09/19	S	G		X								
BD3/20190916	38	16/09/19	S	G		X								
BD4/20190916	—	16/09/19	S	G		X								SEND TO ALS
BD2A/20190916	—	16/09/19	S	G		X								SEND TO ALS
BD1/20190916	39	16/09/19	S	G		X								
BH14 0.3-0.4	40	16/09/19	S	G		X								
PQL (S) mg/kg													**ANZECC PQLs req'd for all water analytes** ☐	

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Lab Report/Reference No: 226396

Total number of samples in container: | **Relinquished by:** | **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd | **Address:** | **Phone:** | **Fax:**

Signed: | **Received by:** S-Bolton | **Date & Time:** 18/09/19 1325

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 226390-A

Client Details

Client	Douglas Partners Pty Ltd
Attention	Jack Snowden
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**84822.02, Eastern Creek**
Number of Samples	40 soil
Date samples received	18/09/2019
Date completed instructions received	20/09/2019

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	23/09/2019
Date of Issue	23/09/2019

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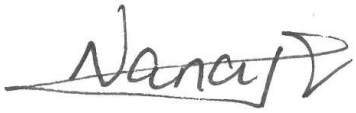
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Jaimie Loa-Kum-Cheung, Metals Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

Metals in TCLP USEPA1311				
Our Reference		226390-A-25	226390-A-26	226390-A-29
Your Reference	UNITS	BH216	BH217	BH220
Depth		0.1-0.2	0.2-0.3	0.1-0.2
Date Sampled		16/09/2019	16/09/2019	16/09/2019
Type of sample		soil	soil	soil
Date extracted	-	23/09/2019	23/09/2019	23/09/2019
Date analysed	-	23/09/2019	23/09/2019	23/09/2019
pH of soil for fluid# determ.	pH units	7.1	8.7	9.5
pH of soil TCLP (after HCl)	pH units	1.7	4.2	1.9
Extraction fluid used	-	1	1	1
pH of final Leachate	pH units	5.0	5.9	5.2
Lead in TCLP	mg/L	0.2	<0.03	[NA]
Nickel in TCLP	mg/L	0.05	[NA]	0.1

Method ID	Methodology Summary
EXTRACT.7	Toxicity Characteristic Leaching Procedure (TCLP) using Zero Headspace Extraction (zHE) using AS4439 and USEPA 1311.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using in house method INORG-004. Please note that the mass used may be scaled down from the default based on sample mass available.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.

QUALITY CONTROL: Metals in TCLP USEPA1311						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	226390-A-29
Date extracted	-			23/09/2019	25	23/09/2019	23/09/2019		23/09/2019	23/09/2019
Date analysed	-			23/09/2019	25	23/09/2019	23/09/2019		23/09/2019	23/09/2019
Lead in TCLP	mg/L	0.03	Metals-020 ICP-AES	<0.03	25	0.2	0.2	0	96	[NT]
Nickel in TCLP	mg/L	0.02	Metals-020 ICP-AES	<0.02	25	0.05	0.05	0	97	93

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.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Andrew Fitzsimons

From: Jack Snowden <Jack.Snowden@douglaspartners.com.au>
Sent: Friday, 20 September 2019 11:57 AM
To: Ken Nguyen; Samplereceipt
Subject: RE: Results for Registration 226390 84822.02, Eastern Creek

Follow Up Flag: Follow up
Flag Status: Flagged

Ref: 226390-A
TAT: 1 day
Due: 23/9/19

ELS,

Can you please schedule TCLP testing on the below on 24 hr TAT:

BH216 0.1-0.2, lead, nickel – 25
BH217 0.2-0.3, lead – 26
BH220 0.1-0.2, nickel – 29

Cheers

Jack Snowden | Occupational Hygienist/ Environmental Scientist
Douglas Partners Pty Ltd | ABN 75 053 980 117 | www.douglaspartners.com.au
96 Hermitage Road West Ryde NSW 2114 | PO Box 472 West Ryde NSW 1685
P: 02 9809 0666 | M: 0413 886 062 | E: Jack.Snowden@douglaspartners.com.au

FINANCIAL REVIEW
CLIENT CHOICE AWARDS 2019
WINNER beaton

This email is confidential. If you are not the intended recipient, please notify us immediately and be aware that any disclosure, copying, distribution or use of the contents of this information is prohibited. Please note that the company does not make any commitment through emails not confirmed by fax or letter.

From: Ken Nguyen <KNguyen@envirolab.com.au>
Sent: Thursday, 19 September 2019 6:22 PM
To: Paul Gorman <Paul.Gorman@douglaspartners.com.au>; Joel James-Hall <joel.james-hall@douglaspartners.com.au>; Jack Snowden <Jack.Snowden@douglaspartners.com.au>
Subject: Results for Registration 226390 84822.02, Eastern Creek

Please refer to attached for:
a copy of the Certificate of Analysis
a copy of the COC/paperwork received from you
ESDAT Extracts
an Excel or .csv file containing the results
Please note that a hard copy will not be posted.

Enquiries should be made directly to:
customerservice@envirolab.com.au

Regards,

Ken Nguyen | Customer Service / Chemist | Envirolab Services Pty Ltd
(Monday to Friday 1pm to 9pm)

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	Douglas Partners Pty Ltd
Attention	Jack Snowden

Sample Login Details

Your reference	84822.02, Eastern Creek
Envirolab Reference	226390-A
Date Sample Received	18/09/2019
Date Instructions Received	20/09/2019
Date Results Expected to be Reported	23/09/2019

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	40 soil
Turnaround Time Requested	1 day
Temperature on Receipt (°C)	16.2
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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ABN 37 112 535 645
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Sample ID	pH of soil for fluid#determ.	pH of soil TCLP (after HCl)	Extraction fluid used	pH of final Leachate	Lead in TCLP	Nickel in TCLP	On Hold
BH201-0.0-0.2							✓
BH201-0.8-1.0							✓
BH202-0.0-0.2							✓
BH202-0.4-0.45							✓
BH203-0.4-0.5							✓
BH203-0.9-1.0							✓
BH204-0.0-0.2							✓
BH204-0.4-0.5							✓
BH204-0.8-1.0							✓
BH205-0.0-0.2							✓
BH205-0.4-0.5							✓
BH205-0.9-1.0							✓
BH205-1.4-1.5							✓
BH206-0.0-0.2							✓
BH206-0.4-0.5							✓
BH207-0.4-0.5							✓
BH207-0.8-1.0							✓
BH211-0.4-0.5							✓
BH211-1.6-1.7							✓
BH212-0.0-0.2							✓
BH212-0.9-1.0							✓
BH212-1.9-2.0							✓
BH214-0.1-0.2							✓
BH215-0.2-0.3							✓
BH216-0.1-0.2	✓	✓	✓	✓	✓	✓	
BH217-0.2-0.3	✓	✓	✓	✓	✓		
BH217-0.5-0.6							✓
BH219-0.3-0.4							✓
BH220-0.1-0.2	✓	✓	✓	✓		✓	
BH220-0.2-0.3							✓
BH220-0.4-0.5							✓
BH221-0.4-0.5							✓

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Sample ID	pH of soil for fluid#determ.	pH of soil TCLP (after HCl)	Extraction fluid used	pH of final Leachate	Lead in TCLP	Nickel in TCLP	On Hold
BH222-0.0-0.1							✓
BH223-0.1-0.2							✓
BH224-0.3-0.4							✓
BH225-0.1-0.2							✓
BD1A/20190916							✓
BD3/20190916							✓
BD1/20190916							✓
BH14-0.3-0.4							✓

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.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

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CERTIFICATE OF ANALYSIS 226858

Client Details

Client	Douglas Partners Pty Ltd
Attention	Paul Gorman
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**84822.02, Eastern Creek**
Number of Samples	11 SOIL
Date samples received	24/09/2019
Date completed instructions received	24/09/2019

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	25/09/2019
Date of Issue	25/09/2019

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Asbestos Approved By
Analysed by Asbestos Approved Identifier: Aida Marner
Authorised by Asbestos Approved Signatory: Matt Mansfield

Results Approved By
Jaimie Loa-Kum-Cheung, Metals Supervisor
Matt Mansfield, HSE manager
Steven Luong, Organics Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

VOCs in soil					
Our Reference		226858-3	226858-4	226858-6	226858-8
Your Reference	UNITS	BH208	BH208	BH209	BH213
Depth		0.0-0.2	0.2-0.3	0.4-0.5	0.4-0.5
Date Sampled		24/09/2019	24/09/2019	24/09/2019	18/09/2019
Type of sample		SOIL	SOIL	SOIL	SOIL
Date extracted	-	24/09/2019	24/09/2019	24/09/2019	24/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Dichlorodifluoromethane	mg/kg	<1	<1	<1	<1
Chloromethane	mg/kg	<1	<1	<1	<1
Vinyl Chloride	mg/kg	<1	<1	<1	<1
Bromomethane	mg/kg	<1	<1	<1	<1
Chloroethane	mg/kg	<1	<1	<1	<1
Trichlorofluoromethane	mg/kg	<1	<1	<1	<1
1,1-Dichloroethene	mg/kg	<1	<1	<1	<1
trans-1,2-dichloroethene	mg/kg	<1	<1	<1	<1
1,1-dichloroethane	mg/kg	<1	<1	<1	<1
cis-1,2-dichloroethene	mg/kg	<1	<1	<1	<1
bromochloromethane	mg/kg	<1	<1	<1	<1
chloroform	mg/kg	<1	<1	<1	<1
2,2-dichloropropane	mg/kg	<1	<1	<1	<1
1,2-dichloroethane	mg/kg	<1	<1	<1	<1
1,1,1-trichloroethane	mg/kg	<1	<1	<1	<1
1,1-dichloropropene	mg/kg	<1	<1	<1	<1
Cyclohexane	mg/kg	<1	<1	<1	<1
carbon tetrachloride	mg/kg	<1	<1	<1	<1
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2
dibromomethane	mg/kg	<1	<1	<1	<1
1,2-dichloropropane	mg/kg	<1	<1	<1	<1
trichloroethene	mg/kg	<1	<1	<1	<1
bromodichloromethane	mg/kg	<1	<1	<1	<1
trans-1,3-dichloropropene	mg/kg	<1	<1	<1	<1
cis-1,3-dichloropropene	mg/kg	<1	<1	<1	<1
1,1,2-trichloroethane	mg/kg	<1	<1	<1	<1
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5
1,3-dichloropropane	mg/kg	<1	<1	<1	<1
dibromochloromethane	mg/kg	<1	<1	<1	<1
1,2-dibromoethane	mg/kg	<1	<1	<1	<1
tetrachloroethene	mg/kg	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	mg/kg	<1	<1	<1	<1
chlorobenzene	mg/kg	<1	<1	<1	<1

VOCs in soil					
Our Reference		226858-3	226858-4	226858-6	226858-8
Your Reference	UNITS	BH208	BH208	BH209	BH213
Depth		0.0-0.2	0.2-0.3	0.4-0.5	0.4-0.5
Date Sampled		24/09/2019	24/09/2019	24/09/2019	18/09/2019
Type of sample		SOIL	SOIL	SOIL	SOIL
Ethylbenzene	mg/kg	<1	<1	<1	<1
bromoform	mg/kg	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2
styrene	mg/kg	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	mg/kg	<1	<1	<1	<1
o-Xylene	mg/kg	<1	<1	<1	<1
1,2,3-trichloropropane	mg/kg	<1	<1	<1	<1
isopropylbenzene	mg/kg	<1	<1	<1	<1
bromobenzene	mg/kg	<1	<1	<1	<1
n-propyl benzene	mg/kg	<1	<1	<1	<1
2-chlorotoluene	mg/kg	<1	<1	<1	<1
4-chlorotoluene	mg/kg	<1	<1	<1	<1
1,3,5-trimethyl benzene	mg/kg	<1	<1	<1	<1
tert-butyl benzene	mg/kg	<1	<1	<1	<1
1,2,4-trimethyl benzene	mg/kg	<1	<1	<1	<1
1,3-dichlorobenzene	mg/kg	<1	<1	<1	<1
sec-butyl benzene	mg/kg	<1	<1	<1	<1
1,4-dichlorobenzene	mg/kg	<1	<1	<1	<1
4-isopropyl toluene	mg/kg	<1	<1	<1	<1
1,2-dichlorobenzene	mg/kg	<1	<1	<1	<1
n-butyl benzene	mg/kg	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	mg/kg	<1	<1	<1	<1
1,2,4-trichlorobenzene	mg/kg	<1	<1	<1	<1
hexachlorobutadiene	mg/kg	<1	<1	<1	<1
1,2,3-trichlorobenzene	mg/kg	<1	<1	<1	<1
Surrogate Dibromofluorometha	%	100	96	97	99
Surrogate aaa-Trifluorotoluene	%	81	105	109	92
Surrogate Toluene-d_8	%	92	91	91	91
Surrogate 4-Bromofluorobenzene	%	84	85	81	81

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		226858-1	226858-2	226858-3	226858-4	226858-5
Your Reference	UNITS	TS	TB	BH208	BH208	BH212
Depth		-	-	0.0-0.2	0.2-0.3	0.4-0.5
Date Sampled		16/09/2019	16/09/2019	24/09/2019	24/09/2019	16/09/2019
Type of sample		SOIL	SOIL	SOIL	SOIL	SOIL
Date extracted	-	24/09/2019	24/09/2019	24/09/2019	24/09/2019	24/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
TRH C_6 - C_9	mg/kg	[NA]	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	[NA]	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	[NA]	<25	<25	<25	<25
Benzene	mg/kg	106%	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	108%	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	103%	<1	<1	<1	<1
m+p-xylene	mg/kg	103%	<2	<2	<2	<2
o-Xylene	mg/kg	102%	<1	<1	<1	<1
naphthalene	mg/kg	[NA]	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	[NA]	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	100	102	81	105	99

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		226858-6	226858-7	226858-8	226858-9	226858-10
Your Reference	UNITS	BH209	BH210	BH213	BH213	TS
Depth		0.4-0.5	0-0.2	0.4-0.5	0.9-1.0	-
Date Sampled		24/09/2019	24/09/2019	18/09/2019	18/09/2019	18/09/2019
Type of sample		SOIL	SOIL	SOIL	SOIL	SOIL
Date extracted	-	24/09/2019	24/09/2019	24/09/2019	24/09/2019	24/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	[NA]
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	[NA]
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	[NA]
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	123%
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	124%
Ethylbenzene	mg/kg	<1	<1	<1	<1	127%
m+p-xylene	mg/kg	<2	<2	<2	<2	128%
o-Xylene	mg/kg	<1	<1	<1	<1	128%
naphthalene	mg/kg	<1	<1	<1	<1	[NA]
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	[NA]
Surrogate aaa-Trifluorotoluene	%	109	94	92	94	106

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		226858-11
Your Reference	UNITS	TB
Depth		-
Date Sampled		18/09/2019
Type of sample		SOIL
Date extracted	-	24/09/2019
Date analysed	-	25/09/2019
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	<3
Surrogate aaa-Trifluorotoluene	%	93

svTRH (C10-C40) in Soil						
Our Reference		226858-3	226858-4	226858-5	226858-6	226858-7
Your Reference	UNITS	BH208	BH208	BH212	BH209	BH210
Depth		0.0-0.2	0.2-0.3	0.4-0.5	0.4-0.5	0-0.2
Date Sampled		24/09/2019	24/09/2019	16/09/2019	24/09/2019	24/09/2019
Type of sample		SOIL	SOIL	SOIL	SOIL	SOIL
Date extracted	-	24/09/2019	24/09/2019	24/09/2019	24/09/2019	24/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	120	<100	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	140	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	140	<50	<50	<50	<50
Surrogate o-Terphenyl	%	96	86	87	87	86

svTRH (C10-C40) in Soil			
Our Reference		226858-8	226858-9
Your Reference	UNITS	BH213	BH213
Depth		0.4-0.5	0.9-1.0
Date Sampled		18/09/2019	18/09/2019
Type of sample		SOIL	SOIL
Date extracted	-	24/09/2019	24/09/2019
Date analysed	-	25/09/2019	25/09/2019
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	%	85	92

PAHs in Soil						
Our Reference		226858-3	226858-4	226858-5	226858-6	226858-7
Your Reference	UNITS	BH208	BH208	BH212	BH209	BH210
Depth		0.0-0.2	0.2-0.3	0.4-0.5	0.4-0.5	0-0.2
Date Sampled		24/09/2019	24/09/2019	16/09/2019	24/09/2019	24/09/2019
Type of sample		SOIL	SOIL	SOIL	SOIL	SOIL
Date extracted	-	24/09/2019	24/09/2019	24/09/2019	24/09/2019	24/09/2019
Date analysed	-	24/09/2019	24/09/2019	24/09/2019	24/09/2019	24/09/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.06	<0.05	<0.05	<0.05	0.1
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.06	<0.05	<0.05	<0.05	0.4
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	107	93	93	93	96

PAHs in Soil			
Our Reference		226858-8	226858-9
Your Reference	UNITS	BH213	BH213
Depth		0.4-0.5	0.9-1.0
Date Sampled		18/09/2019	18/09/2019
Type of sample		SOIL	SOIL
Date extracted	-	24/09/2019	24/09/2019
Date analysed	-	24/09/2019	24/09/2019
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	0.2	0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	0.3	0.3
Pyrene	mg/kg	0.3	0.3
Benzo(a)anthracene	mg/kg	0.2	0.2
Chrysene	mg/kg	0.2	0.2
Benzo(b,j+k)fluoranthene	mg/kg	0.3	0.3
Benzo(a)pyrene	mg/kg	0.2	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	1.7	1.7
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	%	96	94

Organochlorine Pesticides in soil				
Our Reference		226858-3	226858-4	226858-8
Your Reference	UNITS	BH208	BH208	BH213
Depth		0.0-0.2	0.2-0.3	0.4-0.5
Date Sampled		24/09/2019	24/09/2019	18/09/2019
Type of sample		SOIL	SOIL	SOIL
Date extracted	-	24/09/2019	24/09/2019	24/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019
HCB	mg/kg	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	0.3
alpha-chlordane	mg/kg	<0.1	<0.1	0.3
Endosulfan I	mg/kg	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	102	93	91

Organophosphorus Pesticides				
Our Reference		226858-3	226858-4	226858-8
Your Reference	UNITS	BH208	BH208	BH213
Depth		0.0-0.2	0.2-0.3	0.4-0.5
Date Sampled		24/09/2019	24/09/2019	18/09/2019
Type of sample		SOIL	SOIL	SOIL
Date extracted	-	24/09/2019	24/09/2019	24/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	102	93	91

PCBs in Soil				
Our Reference		226858-3	226858-4	226858-8
Your Reference	UNITS	BH208	BH208	BH213
Depth		0.0-0.2	0.2-0.3	0.4-0.5
Date Sampled		24/09/2019	24/09/2019	18/09/2019
Type of sample		SOIL	SOIL	SOIL
Date extracted	-	24/09/2019	24/09/2019	24/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	102	93	91

Acid Extractable metals in soil						
Our Reference		226858-3	226858-4	226858-5	226858-6	226858-7
Your Reference	UNITS	BH208	BH208	BH212	BH209	BH210
Depth		0.0-0.2	0.2-0.3	0.4-0.5	0.4-0.5	0-0.2
Date Sampled		24/09/2019	24/09/2019	16/09/2019	24/09/2019	24/09/2019
Type of sample		SOIL	SOIL	SOIL	SOIL	SOIL
Date prepared	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Arsenic	mg/kg	7	6	9	<4	<4
Cadmium	mg/kg	12	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	87	25	11	6	9
Copper	mg/kg	410	25	23	11	7
Lead	mg/kg	180	19	23	6	12
Mercury	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	71	19	4	3	3
Zinc	mg/kg	1,600	81	34	9	43

Acid Extractable metals in soil			
Our Reference		226858-8	226858-9
Your Reference	UNITS	BH213	BH213
Depth		0.4-0.5	0.9-1.0
Date Sampled		18/09/2019	18/09/2019
Type of sample		SOIL	SOIL
Date prepared	-	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019
Arsenic	mg/kg	7	6
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	12	14
Copper	mg/kg	23	16
Lead	mg/kg	200	38
Mercury	mg/kg	0.2	<0.1
Nickel	mg/kg	8	14
Zinc	mg/kg	160	48

Moisture						
Our Reference		226858-3	226858-4	226858-5	226858-6	226858-7
Your Reference	UNITS	BH208	BH208	BH212	BH209	BH210
Depth		0.0-0.2	0.2-0.3	0.4-0.5	0.4-0.5	0-0.2
Date Sampled		24/09/2019	24/09/2019	16/09/2019	24/09/2019	24/09/2019
Type of sample		SOIL	SOIL	SOIL	SOIL	SOIL
Date prepared	-	24/09/2019	24/09/2019	24/09/2019	24/09/2019	24/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Moisture	%	40	17	20	17	14

Moisture			
Our Reference		226858-8	226858-9
Your Reference	UNITS	BH213	BH213
Depth		0.4-0.5	0.9-1.0
Date Sampled		18/09/2019	18/09/2019
Type of sample		SOIL	SOIL
Date prepared	-	24/09/2019	24/09/2019
Date analysed	-	25/09/2019	25/09/2019
Moisture	%	26	19

Asbestos ID - soils						
Our Reference		226858-3	226858-4	226858-5	226858-6	226858-7
Your Reference	UNITS	BH208	BH208	BH212	BH209	BH210
Depth		0.0-0.2	0.2-0.3	0.4-0.5	0.4-0.5	0-0.2
Date Sampled		24/09/2019	24/09/2019	16/09/2019	24/09/2019	24/09/2019
Type of sample		SOIL	SOIL	SOIL	SOIL	SOIL
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Sample mass tested	g	Approx. 20g	Approx. 25g	Approx. 30g	Approx. 25g	Approx. 35g
Sample Description	-	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils			
Our Reference		226858-8	226858-9
Your Reference	UNITS	BH213	BH213
Depth		0.4-0.5	0.9-1.0
Date Sampled		18/09/2019	18/09/2019
Type of sample		SOIL	SOIL
Date analysed	-	25/09/2019	25/09/2019
Sample mass tested	g	Approx. 25g	Approx. 30g
Sample Description	-	Brown clayey soil & rocks	Brown clayey soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	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-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-7	[NT]
Date extracted	-			24/09/2019	3	24/09/2019	24/09/2019		24/09/2019	[NT]
Date analysed	-			25/09/2019	3	25/09/2019	25/09/2019		25/09/2019	[NT]
Dichlorodifluoromethane	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
Chloromethane	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
Vinyl Chloride	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
Bromomethane	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
Chloroethane	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
Trichlorofluoromethane	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
1,1-Dichloroethene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
trans-1,2-dichloroethene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
1,1-dichloroethane	mg/kg	1	Org-014	<1	3	<1	<1	0	120	[NT]
cis-1,2-dichloroethene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
bromochloromethane	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
chloroform	mg/kg	1	Org-014	<1	3	<1	<1	0	108	[NT]
2,2-dichloropropane	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
1,2-dichloroethane	mg/kg	1	Org-014	<1	3	<1	<1	0	110	[NT]
1,1,1-trichloroethane	mg/kg	1	Org-014	<1	3	<1	<1	0	98	[NT]
1,1-dichloropropene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
Cyclohexane	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
carbon tetrachloride	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-014	<0.2	3	<0.2	<0.2	0	[NT]	[NT]
dibromomethane	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
1,2-dichloropropane	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
trichloroethene	mg/kg	1	Org-014	<1	3	<1	<1	0	96	[NT]
bromodichloromethane	mg/kg	1	Org-014	<1	3	<1	<1	0	90	[NT]
trans-1,3-dichloropropene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
cis-1,3-dichloropropene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
1,1,2-trichloroethane	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-014	<0.5	3	<0.5	<0.5	0	[NT]	[NT]
1,3-dichloropropane	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
dibromochloromethane	mg/kg	1	Org-014	<1	3	<1	<1	0	76	[NT]
1,2-dibromoethane	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
tetrachloroethene	mg/kg	1	Org-014	<1	3	<1	<1	0	97	[NT]
1,1,1,2-tetrachloroethane	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
chlorobenzene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
bromoform	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-014	<2	3	<2	<2	0	[NT]	[NT]
styrene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
o-Xylene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
1,2,3-trichloropropane	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
isopropylbenzene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
bromobenzene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
n-propyl benzene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
2-chlorotoluene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
4-chlorotoluene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
1,3,5-trimethyl benzene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
tert-butyl benzene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
1,2,4-trimethyl benzene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
1,3-dichlorobenzene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
sec-butyl benzene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
1,4-dichlorobenzene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
4-isopropyl toluene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
1,2-dichlorobenzene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
n-butyl benzene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
1,2-dibromo-3-chloropropane	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
1,2,4-trichlorobenzene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
hexachlorobutadiene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
1,2,3-trichlorobenzene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluorometha	%		Org-014	94	3	100	97	3	94	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-014	92	3	81	78	4	108	[NT]
Surrogate Toluene-d_8	%		Org-014	90	3	92	92	0	89	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-014	81	3	84	82	2	90	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			24/09/2019	3	24/09/2019	24/09/2019		24/09/2019	[NT]
Date analysed	-			25/09/2019	3	25/09/2019	25/09/2019		25/09/2019	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	<25	3	<25	<25	0	104	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	3	<25	<25	0	104	[NT]
Benzene	mg/kg	0.2	Org-016	<0.2	3	<0.2	<0.2	0	110	[NT]
Toluene	mg/kg	0.5	Org-016	<0.5	3	<0.5	<0.5	0	101	[NT]
Ethylbenzene	mg/kg	1	Org-016	<1	3	<1	<1	0	102	[NT]
m+p-xylene	mg/kg	2	Org-016	<2	3	<2	<2	0	104	[NT]
o-Xylene	mg/kg	1	Org-016	<1	3	<1	<1	0	102	[NT]
naphthalene	mg/kg	1	Org-014	<1	3	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	92	3	81	78	4	108	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			24/09/2019	3	24/09/2019	24/09/2019		24/09/2019	[NT]
Date analysed	-			24/09/2019	3	25/09/2019	25/09/2019		24/09/2019	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	3	<50	<50	0	103	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	3	<100	<100	0	103	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	3	120	110	9	123	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	3	<50	<50	0	103	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	3	140	140	0	103	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	3	<100	<100	0	123	[NT]
Surrogate o-Terphenyl	%		Org-003	94	3	96	104	8	112	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			24/09/2019	3	24/09/2019	24/09/2019		24/09/2019	[NT]
Date analysed	-			24/09/2019	3	24/09/2019	24/09/2019		24/09/2019	[NT]
Naphthalene	mg/kg	0.1	Org-012	<0.1	3	<0.1	<0.1	0	118	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	<0.1	3	<0.1	<0.1	0	110	[NT]
Phenanthrene	mg/kg	0.1	Org-012	<0.1	3	<0.1	<0.1	0	110	[NT]
Anthracene	mg/kg	0.1	Org-012	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	3	<0.1	<0.1	0	108	[NT]
Pyrene	mg/kg	0.1	Org-012	<0.1	3	<0.1	<0.1	0	112	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	<0.1	3	<0.1	<0.1	0	118	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	3	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	3	0.06	<0.05	18	110	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	94	3	107	102	5	98	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			24/09/2019	3	24/09/2019	24/09/2019		24/09/2019	[NT]
Date analysed	-			25/09/2019	3	25/09/2019	25/09/2019		25/09/2019	[NT]
HCB	mg/kg	0.1	Org-005	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	3	<0.1	<0.1	0	91	[NT]
gamma-BHC	mg/kg	0.1	Org-005	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	<0.1	3	<0.1	<0.1	0	96	[NT]
Heptachlor	mg/kg	0.1	Org-005	<0.1	3	<0.1	<0.1	0	91	[NT]
delta-BHC	mg/kg	0.1	Org-005	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	<0.1	3	<0.1	<0.1	0	101	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	3	<0.1	<0.1	0	97	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	<0.1	3	<0.1	<0.1	0	113	[NT]
Dieldrin	mg/kg	0.1	Org-005	<0.1	3	<0.1	<0.1	0	113	[NT]
Endrin	mg/kg	0.1	Org-005	<0.1	3	<0.1	<0.1	0	101	[NT]
pp-DDD	mg/kg	0.1	Org-005	<0.1	3	<0.1	<0.1	0	121	[NT]
Endosulfan II	mg/kg	0.1	Org-005	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	3	<0.1	<0.1	0	77	[NT]
Methoxychlor	mg/kg	0.1	Org-005	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	97	3	102	103	1	86	[NT]

QUALITY CONTROL: Organophosphorus Pesticides						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			24/09/2019	3	24/09/2019	24/09/2019		24/09/2019	[NT]
Date analysed	-			25/09/2019	3	25/09/2019	25/09/2019		25/09/2019	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	3	<0.1	<0.1	0	104	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	3	<0.1	<0.1	0	89	[NT]
Dimethoate	mg/kg	0.1	Org-008	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	<0.1	3	<0.1	<0.1	0	118	[NT]
Fenitrothion	mg/kg	0.1	Org-008	<0.1	3	<0.1	<0.1	0	114	[NT]
Malathion	mg/kg	0.1	Org-008	<0.1	3	<0.1	<0.1	0	118	[NT]
Parathion	mg/kg	0.1	Org-008	<0.1	3	<0.1	<0.1	0	110	[NT]
Ronnel	mg/kg	0.1	Org-008	<0.1	3	<0.1	<0.1	0	98	[NT]
Surrogate TCMX	%		Org-008	97	3	102	103	1	86	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			24/09/2019	3	24/09/2019	24/09/2019		24/09/2019	[NT]
Date analysed	-			25/09/2019	3	25/09/2019	25/09/2019		25/09/2019	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	3	<0.1	<0.1	0	124	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	97	3	102	103	1	86	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date prepared	-			25/09/2019	3	25/09/2019	25/09/2019		25/09/2019	[NT]
Date analysed	-			25/09/2019	3	25/09/2019	25/09/2019		25/09/2019	[NT]
Arsenic	mg/kg	4	Metals-020	<4	3	7	7	0	107	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	3	12	10	18	102	[NT]
Chromium	mg/kg	1	Metals-020	<1	3	87	87	0	117	[NT]
Copper	mg/kg	1	Metals-020	<1	3	410	530	26	110	[NT]
Lead	mg/kg	1	Metals-020	<1	3	180	140	25	119	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	3	0.2	0.2	0	101	[NT]
Nickel	mg/kg	1	Metals-020	<1	3	71	73	3	104	[NT]
Zinc	mg/kg	1	Metals-020	<1	3	1600	1500	6	110	[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.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Report Comments

Asbestos: A portion of the supplied samples were sub-sampled for asbestos analysis according to Envirolab procedures.
We cannot guarantee that these sub-samples are indicative of the entire sample.
Envirolab recommends supplying 40-50g of sample in its own container.
Note: Samples requested for asbestos testing were sub-sampled from jars provided by the client.

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No: 84822.02	**Suburb:** Eastern Creek	**To:** Lab name	
Project Name: Green Warratah	**Order Number**		
Project Manager: PG	**Sampler:** JJH	**Attn:**	
Emails: Paul.Gorman; Jack.Snowden; Joel.Jones-Lee@douglaspartners.com.au		**Phone:**	
Date Required: Same day ☐ 24 hours ☒ 48 hours ☐ 72 hours ☐ Standard ☐		**Email:**	
Prior Storage: ☐ Esky ☒ Fridge ☐ Shelved	Do samples contain 'potential' HBM? Yes ☐ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)		

Sample ID	Lab ID	Date Sampled	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: TRH/BTEX	Combo 8a	Combo 3a	VOC	OCP/OPP/PCB	Notes/preservation
TS/TB 16/9/19	1,2	—	—	—	X					Soil TS/TB
~~BH208 0.2-0.3~~			S	G		~~X~~				
BH208 0.0-0.2	3	24.9.19	↓	↓		X		X	X	
BH208 0.2-0.3	4	↓				X		X		
BH212 0.4-0.5	5	16.9.19					X			
BH209 ~~0.2-0.5~~ 0.4-0.5	6	24.9.19					X	X		
BH210 0-0.2	7	↓	↓				X		~~X~~	
BH213 0.4-0.5	8	18.9.19	S			X		X	X	
BH213 0.9-1.0	9	↓	S	↓			X			
TS/TB 18/9/19	10,11					X				Soil TS/TB
PQL (S) mg/kg										

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 226858
Date Received: 24/9
Time Received: 17:30
Received by: RB
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

ANZECC PQLs req'd for all water analytes ☐

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Lab Report/Reference No:

Metals to Analyse: 8HM unless specified here:

Total number of samples in container: **Relinquished by:** **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd **Address:** **Phone:** **Fax:**

Signed: **Received by:** Andy Zhang **Date & Time:** 24/9 17:30

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	Douglas Partners Pty Ltd
Attention	Paul Gorman

Sample Login Details

Your reference	84822.02, Eastern Creek
Envirolab Reference	226858
Date Sample Received	24/09/2019
Date Instructions Received	24/09/2019
Date Results Expected to be Reported	25/09/2019

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	11 SOIL
Turnaround Time Requested	1 day
Temperature on Receipt (°C)	6.0
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
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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	Asbestos ID - soils
TS		✓							
TB		✓							
BH208-0.0-0.2	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH208-0.2-0.3	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH212-0.4-0.5		✓	✓	✓				✓	✓
BH209-0.4-0.5	✓	✓	✓	✓				✓	✓
BH210-0-0.2		✓	✓	✓				✓	✓
BH213-0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH213-0.9-1.0		✓	✓	✓				✓	✓
TS		✓							
TB		✓							

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.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

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customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 226858-A

Client Details

Client	Douglas Partners Pty Ltd
Attention	Jack Snowden
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**84822.02, Eastern Creek**
Number of Samples	Additional Testing on 2 Soils
Date samples received	24/09/2019
Date completed instructions received	25/09/2019

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	26/09/2019
Date of Issue	26/09/2019

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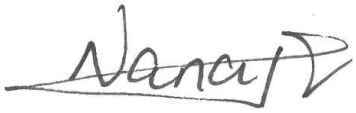
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Asbestos Approved By
Analysed by Asbestos Approved Identifier: Aida Marner
Authorised by Asbestos Approved Signatory: Matt Mansfield
Results Approved By
Jaimie Loa-Kum-Cheung, Metals Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

Metals in TCLP USEPA1311			
Our Reference		226858-A-3	226858-A-8
Your Reference	UNITS	BH208	BH213
Depth		0.0-0.2	0.4-0.5
Date Sampled		24/09/2019	18/09/2019
Type of sample		SOIL	SOIL
Date extracted	-	26/09/2019	26/09/2019
Date analysed	-	26/09/2019	26/09/2019
pH of soil for fluid# determ.	pH units	7.9	9.8
pH of soil TCLP (after HCl)	pH units	1.8	1.8
Extraction fluid used	-	1	1
pH of final Leachate	pH units	5.0	5.6
Lead in TCLP	mg/L	<0.03	0.35
Nickel in TCLP	mg/L	<0.02	[NA]

Method ID	Methodology Summary
EXTRACT.7	Toxicity Characteristic Leaching Procedure (TCLP) using Zero Headspace Extraction (zHE) using AS4439 and USEPA 1311.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using in house method INORG-004. Please note that the mass used may be scaled down from the default based on sample mass available.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.

QUALITY CONTROL: Metals in TCLP USEPA1311						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			26/09/2019	3	26/09/2019	26/09/2019		26/09/2019	[NT]
Date analysed	-			26/09/2019	3	26/09/2019	26/09/2019		26/09/2019	[NT]
Lead in TCLP	mg/L	0.03	Metals-020 ICP-AES	<0.03	3	<0.03	<0.03	0	97	[NT]
Nickel in TCLP	mg/L	0.02	Metals-020 ICP-AES	<0.02	3	<0.02	<0.02	0	98	[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
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Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Jessica Hie

From: Jack Snowden <Jack.Snowden@douglaspartners.com.au>
Sent: Wednesday, 25 September 2019 5:21 PM
To: Nancy Zhang; Samplereceipt
Cc: Paul Gorman
Subject: Re: Results for Registration 226858 84822.02, Eastern Creek

ELS please schedule TCLP on 24 hr TAT on the below.

226858 - A
Due: 26/9/19
1 day TAT.

Lead, nickel in BH 208 0-0.2 — 3
Lead in BH 213 0.4-0.5 — 8

Thanks

Jack Snowden
0450 404 009

Sent from my iPhone

On 25 Sep 2019, at 5:07 pm, Nancy Zhang <NZhang@envirolab.com.au> wrote:

> Please refer to attached for:
> a copy of the Certificate of Analysis
> a copy of the COC/paperwork received from you
> ESDAT Extracts
> an Excel or .csv file containing the results
> Please note that a hard copy will not be posted.
>
> Enquiries should be made directly to:
> customerservice@envirolab.com.au
>
> Regards,
>
> Nancy Zhang | Laboratory Manager, Sydney | Envirolab Services Pty Ltd
>
> ***Great Science, Great Service.***
>
> 12 Ashley Street Chatswood NSW 2067
> **T** 612 9910 6200 **F** 612 9910 6201
> **E** nzhang@envirolab.com.au | **W** www.envirolab.com.au
>
> <imageb2f04a.PNG>
> <e1bb79.png> <16d150.png>
>
> <image28ea20.PNG> PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL

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	Douglas Partners Pty Ltd
Attention	Jack Snowden

Sample Login Details

Your reference	84822.02, Eastern Creek
Envirolab Reference	226858-A
Date Sample Received	24/09/2019
Date Instructions Received	25/09/2019
Date Results Expected to be Reported	26/09/2019

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	Additional Testing on 2 Soils
Turnaround Time Requested	1 day
Temperature on Receipt (°C)	6.0
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	Metals in TCLP USEPA1311	On Hold
TS		✓
TB		✓
BH208-0.0-0.2	✓	
BH208-0.2-0.3		✓
BH212-0.4-0.5		✓
BH209-0.4-0.5		✓
BH210-0-0.2		✓
BH213-0.4-0.5	✓	
BH213-0.9-1.0		✓
TS		✓
TB		✓

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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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TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1930220**	Page	: 1 of 6
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: JACK SNOWDEN	Contact	: Shirley LeCornu
Address	: PO BOX 472 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 1685	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +6138549 9630
Project	: 84822.02 - Green Waratah	Date Samples Received	: 18-Sep-2019 18:39
Order number	: ----	Date Analysis Commenced	: 19-Sep-2019
C-O-C number	: ----	Issue Date	: 23-Sep-2019 10:54
Sampler	: JS		
Site	: Eastern Creek		
Quote number	: EN/222		
No. of samples received	: 3		
No. of samples analysed	: 3		

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*
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	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) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- 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: 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
- 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	BD2/20190916	BD4/20190916	BD2A/20190916	----	----
			Client sampling date / time	16-Sep-2019 00:00	16-Sep-2019 00:00	16-Sep-2019 00:00	----	----
Compound	CAS Number	LOR	Unit	ES1930220-001	ES1930220-002	ES1930220-003	--------	--------
				Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	14.0	17.0	19.3	----	----
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	21.9	30.8	39.9	----	----
APPROVED IDENTIFIER:	----	-	--	C.OWLER	C.OWLER	C.OWLER	----	----
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	No	----	----
Organic Fibre	----	0.1	g/kg	No	No	No	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	11	12	6	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	21	14	21	----	----
Copper	7440-50-8	5	mg/kg	19	28	26	----	----
Lead	7439-92-1	5	mg/kg	20	34	17	----	----
Nickel	7440-02-0	2	mg/kg	13	5	10	----	----
Zinc	7440-66-6	5	mg/kg	455	50	42	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
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	BD2/20190916	BD4/20190916	BD2A/20190916	----	----
				Client sampling date / time	16-Sep-2019 00:00	16-Sep-2019 00:00	16-Sep-2019 00:00	----	----
Compound	CAS Number	LOR	Unit		ES1930220-001	ES1930220-002	ES1930220-003	--------	--------
					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	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**77.5**	**77.6**	**72.1**	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**85.0**	**83.9**	**82.2**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BD2/20190916	BD4/20190916	BD2A/20190916	----	----
				Client sampling date / time	16-Sep-2019 00:00	16-Sep-2019 00:00	16-Sep-2019 00:00	----	----
Compound	CAS Number	LOR	Unit		ES1930220-001	ES1930220-002	ES1930220-003	--------	--------
					Result	Result	Result	----	----
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	0.5	%		**63.7**	**59.9**	**57.0**	**----**	**----**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**100**	**100**	**98.6**	**----**	**----**
Anthracene-d10	1719-06-8	0.5	%		**87.6**	**88.5**	**86.4**	**----**	**----**
4-Terphenyl-d14	1718-51-0	0.5	%		**95.6**	**96.3**	**94.9**	**----**	**----**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**116**	**108**	**106**	**----**	**----**
Toluene-D8	2037-26-5	0.2	%		**114**	**102**	**100**	**----**	**----**
4-Bromofluorobenzene	460-00-4	0.2	%		**95.7**	**88.0**	**86.3**	**----**	**----**

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	BD2/20190916 - 16-Sep-2019 00:00	Mid brown soil.
EA200: Description	BD4/20190916 - 16-Sep-2019 00:00	Mid brown soil.
EA200: Description	BD2A/20190916 - 16-Sep-2019 00:00	Mid brown soil.

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	Recovery Limits (%) High
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

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES1930220**	Page	: 1 of 6
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: JACK SNOWDEN	Contact	: Shirley LeCornu
Address	: PO BOX 472 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 1685	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +6138549 9630
Project	: 84822.02 - Green Waratah	Date Samples Received	: 18-Sep-2019
Order number	: ----	Date Analysis Commenced	: 19-Sep-2019
C-O-C number	: ----	Issue Date	: 23-Sep-2019
Sampler	: JS		
Site	: Eastern Creek		
Quote number	: EN/222		
No. of samples received	: 3		
No. of samples analysed	: 3		

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
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	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 (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 2593685)									
ES1930331-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	15	13	15.0	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	9	48.5	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	8	8	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	6	7	0.00	No Limit
EW1904009-017	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	29	29	0.00	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	5	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	22	20	12.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	12	11	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	17	15	7.90	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2593688)									
ES1930028-001	Anonymous	EA055: Moisture Content	----	0.1	%	7.5	7.5	0.00	No Limit
ES1930331-008	Anonymous	EA055: Moisture Content	----	0.1	%	15.8	15.6	1.49	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2593684)									
ES1929771-056	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.1	0.00	No Limit
ES1929870-022	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2596918)									
ES1930220-001	BD2/20190916	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

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: 2596918) - continued									
ES1930220-001	BD2/20190916	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: 2592394)									
ES1930220-001	BD2/20190916	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2596916)									
ES1930220-001	BD2/20190916	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 Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2592394)									
ES1930220-001	BD2/20190916	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: 2596916)									
ES1930220-001	BD2/20190916	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: BTEXN (QC Lot: 2592394)									
ES1930220-001	BD2/20190916	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

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
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2593685)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	105	86.0	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	102	83.0	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	95.7	76.0	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	102	86.0	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	101	80.0	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	104	87.0	123
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	112	80.0	122
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2593684)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	78.7	70.0	105
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2596918)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	102	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	109	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	102	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	106	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	102	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	103	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	111	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	108	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	97.1	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	94.7	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	88.4	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	97.6	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	103	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	87.4	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	81.2	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	85.5	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2592394)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	90.1	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2596916)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	86.6	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	104	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	100	71.0	129
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2592394)								

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2592394) - continued								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	83.8	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2596916)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	95.9	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	103	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	92.4	63.0	131
EP080: BTEXN (QCLot: 2592394)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	89.4	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	83.8	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	95.5	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	78.5	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	84.3	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	100	63.0	119

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
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2593685)							
ES1930331-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	97.8	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.5	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	93.2	70.0	130
		EG005T: Copper	7440-50-8	250 mg/kg	98.5	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	98.4	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	100.0	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	101	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2593684)							
ES1929771-056	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	89.1	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2596918)							
ES1930220-001	BD2/20190916	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	92.7	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	104	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2592394)							
ES1930220-001	BD2/20190916	EP080: C6 - C9 Fraction	----	32.5 mg/kg	103	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2596916)							

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: 2596916) - continued							
ES1930220-001	BD2/20190916	EP071: C10 - C14 Fraction	----	523 mg/kg	95.2	73.0	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	112	53.0	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	111	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2592394)							
ES1930220-001	BD2/20190916	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	92.6	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2596916)							
ES1930220-001	BD2/20190916	EP071: >C10 - C16 Fraction	----	860 mg/kg	101	73.0	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	116	53.0	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	103	52.0	132
EP080: BTEXN (QCLot: 2592394)							
ES1930220-001	BD2/20190916	EP080: Benzene	71-43-2	2.5 mg/kg	80.0	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	89.0	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	86.7	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	88.2	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	95.6	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	82.6	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES1930220**	Page	: 1 of 5
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: JACK SNOWDEN	Telephone	: +6138549 9630
Project	: 84822.02 - Green Waratah	Date Samples Received	: 18-Sep-2019
Site	: Eastern Creek	Issue Date	: 23-Sep-2019
Sampler	: JS	No. of samples received	: 3
Order number	: ----	No. of samples analysed	: 3

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: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
BD2/20190916, BD4/20190916, BD2A/20190916	**16-Sep-2019**	**----**	----	----	**19-Sep-2019**	30-Sep-2019	✓
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - Subsampled by ALS (EA200)							
BD2/20190916, BD4/20190916, BD2A/20190916	**16-Sep-2019**	**----**	----	----	**20-Sep-2019**	14-Mar-2020	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
BD2/20190916, BD4/20190916, BD2A/20190916	**16-Sep-2019**	**19-Sep-2019**	14-Mar-2020	✓	**19-Sep-2019**	14-Mar-2020	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
BD2/20190916, BD4/20190916, BD2A/20190916	**16-Sep-2019**	**19-Sep-2019**	14-Oct-2019	✓	**20-Sep-2019**	14-Oct-2019	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
BD2/20190916, BD4/20190916, BD2A/20190916	**16-Sep-2019**	**19-Sep-2019**	30-Sep-2019	✓	**20-Sep-2019**	29-Oct-2019	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
BD2/20190916, BD4/20190916, BD2A/20190916	**16-Sep-2019**	**19-Sep-2019**	30-Sep-2019	✓	**20-Sep-2019**	30-Sep-2019	✓
Soil Glass Jar - Unpreserved (EP071)							
BD2/20190916, BD4/20190916, BD2A/20190916	**16-Sep-2019**	**19-Sep-2019**	30-Sep-2019	✓	**23-Sep-2019**	29-Oct-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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP080)								
BD2/20190916, BD2A/20190916	BD4/20190916,	**16-Sep-2019**	**19-Sep-2019**	30-Sep-2019	✓	**20-Sep-2019**	30-Sep-2019	✓
Soil Glass Jar - Unpreserved (EP071)								
BD2/20190916, BD2A/20190916	BD4/20190916,	**16-Sep-2019**	**19-Sep-2019**	30-Sep-2019	✓	**23-Sep-2019**	29-Oct-2019	✓
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080)								
BD2/20190916, BD2A/20190916	BD4/20190916,	**16-Sep-2019**	**19-Sep-2019**	30-Sep-2019	✓	**20-Sep-2019**	30-Sep-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*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	3	**33.33**	**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-AES	EG005T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	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-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	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-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	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-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (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
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)
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.
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.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)
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.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES1930220**

Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: JACK SNOWDEN	Contact	: Shirley LeCornu
Address	: PO BOX 472 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 1685	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: jack.snowden@douglaspartners.com.au	E-mail	: shirley.lecornu@Alsglobal.com
Telephone	: ----	Telephone	: +6138549 9630
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: 84822.02 - Green Waratah	Page	: 1 of 3
Order number	: ----	Quote number	: EM2017DOUPAR0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Eastern Creek		
Sampler	: JS		

Dates

Date Samples Received	: 18-Sep-2019 18:39	Issue Date	: 18-Sep-2019
Client Requested Due Date	: 20-Sep-2019	Scheduled Reporting Date	: **20-Sep-2019**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 8.9'C - Ice Bricks present
Receipt Detail	: FOAM ESKY	No. of samples received / analysed	: 3 / 3

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 note that the scheduled reporting date has not been confirmed with laboratory management due to the late arrival of the samples. If the scheduled reporting date is not achievable ALS will be in contact with you.
- **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 ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

Method Client sample ID	Sample Container Received	Preferred Sample Container for Analysis
Asbestos Identification in Soils : EA200		
BD2/20190916	- Snap Lock Bag - Subsampled by ALS	- Snap Lock Bag - ACM/Asbestos Grab Bag
BD4/20190916	- Snap Lock Bag - Subsampled by ALS	- Snap Lock Bag - ACM/Asbestos Grab Bag
BD2A/20190916	- Snap Lock Bag - Subsampled by ALS	- Snap Lock Bag - ACM/Asbestos Grab Bag

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 - EA055-103 Moisture Content	SOIL - EA200G Asbestos Identification in Soils -	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES1930220-001	16-Sep-2019 00:00	BD2/20190916	✓	✓	✓
ES1930220-002	16-Sep-2019 00:00	BD4/20190916	✓	✓	✓
ES1930220-003	16-Sep-2019 00:00	BD2A/20190916	✓	✓	✓

Proactive Holding Time Report

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

Requested Deliverables

ACCOUNTS BRISBANE

- A4 - AU Tax Invoice (INV)	Email	brisbane@douglaspartners.com.au

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	accounts@douglaspartners.com.au

JACK SNOWDEN

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

Joel James-Hall

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

PAUL GORMAN

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

ES193 0220

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	84822.02	**Suburb:**	Eastern Creek	**To:**	Lab name
Project Name:	Green Waratah	**Order Number**			
Project Manager:	JS	**Sampler:**	JS	**Attn:**	
Emails:	el.james-hall;jack.snowden@douglaspartners.com.	paul.gorman@douglaspartners.com.au		**Phone:**	Subcon / ~~Forward Lab / Split WO~~
Date Required:	24 hr TAT			**Email:**	Lab / Analysis: Aclabs
Prior Storage:	☐ Eski	Do samples contain 'potential' HBM?	Yes ☐	No ☐	(If YES, ~~then handle, transport and store in accordance with FPM HAZID~~) Organised By / Date:

Sample ID	Lab ID	Sampling Date	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: combo 8a	combo 3a	OCP/OPP/PCB	VOC	Ph & cec	Ammonia				Notes/preservation
BH220 0.4-0.5	31	16/09/19	S	G	X		X	X		X				
BH221 0.4-0.5	32	16/09/19	S	G		X								
BH222 0.0-0.1	33	16/09/19	S	G	X					X				
BH223 0.1-0.2	34	16/09/19	S	G	X			X		X				
BH224 0.3-0.4	35	16/09/19	S	G		X								
BH225 0.1-0.2	36	16/09/19	S	G		X			X					
(1) BD2/20190916	—	16/09/19	S	G		X								SEND TO ALS
BD1A/20190916	37	16/09/19	S	G		X								
BD3/20190916	38	16/09/19	S	G		X								
(2) BD4/20190916	—	16/09/19	S	G		X								SEND TO ALS
(3) BD2A/20190916	—	16/09/19	S	G		X								SEND TO ALS
BD1/20190916	39	16/09/19	S	G		X								
BH14 0.3-0.4	40	16/09/19	S	G		X								
PQL (S) mg/kg														**ANZECC PQLs req'd for all water analytes** ☐

Relinquished By / Date:
Connote / Courier:
WO No:
Attached By PO / Internal Sheet:

TAT

Environmental Division Sydney
Work Order Reference
ES1930220
Telephone : +61-2-8784 8555

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Lab Report/Reference No: 226390

Metals to Analyse: 8HM unless specified here:

Total number of samples in container: | **Relinquished by:** | **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd | **Address** | **Phone:** | **Fax:**

Signed: | **Received by:** S Bolton SB | **Date & Time:** 18/09/19 1325

Relin'shed by: ELS Sycl. S. Bolton SB 18/09/19 14:08

Rec: Sydney 18/9/19 1810 SB

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

INTERIM REPORT 226319

Client Details

Client	Douglas Partners Pty Ltd
Attention	Paul Gorman
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**84822.02, Eastern Creek**
Number of Samples	10 Water
Date samples received	17/09/2019
Date completed instructions received	17/09/2019

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	18/09/2019
Interim Report Date	19/09/2019

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

VOCs in water						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Dichlorodifluoromethane	µg/L	<10	<10	<10	<10	<10
Chloromethane	µg/L	<10	<10	<10	<10	<10
Vinyl Chloride	µg/L	<10	<10	<10	<10	<10
Bromomethane	µg/L	<10	<10	<10	<10	<10
Chloroethane	µg/L	<10	<10	<10	<10	<10
Trichlorofluoromethane	µg/L	<10	<10	<10	<10	<10
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
1,1-dichloroethane	µg/L	<1	<1	<1	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1
2,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
1,2-dichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-dichloropropene	µg/L	<1	<1	<1	<1	<1
Cyclohexane	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Benzene	µg/L	<1	<1	<1	<1	<1
Dibromomethane	µg/L	<1	<1	<1	<1	<1
1,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<1	<1	<1	<1	<1
trans-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	1	<1	<1	<1	<1
1,3-dichloropropane	µg/L	<1	<1	<1	<1	<1
Dibromochloromethane	µg/L	<1	<1	<1	<1	<1
1,2-dibromoethane	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1

VOCs in water						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Bromoform	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
Styrene	µg/L	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
o-xylene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichloropropane	µg/L	<1	<1	<1	<1	<1
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1
Bromobenzene	µg/L	<1	<1	<1	<1	<1
n-propyl benzene	µg/L	<1	<1	<1	<1	<1
2-chlorotoluene	µg/L	<1	<1	<1	<1	<1
4-chlorotoluene	µg/L	<1	<1	<1	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
Tert-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
Sec-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
4-isopropyl toluene	µg/L	<1	<1	4	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
n-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	102	101	101	105	104
Surrogate toluene-d8	%	100	100	99	100	100
Surrogate 4-BFB	%	113	110	113	112	109

VOCs in water				
Our Reference		226319-6	226319-7	226319-10
Your Reference	UNITS	SW06	BD1/20190917	Rinsate
Date Sampled		17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water
Date extracted	-	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019
Dichlorodifluoromethane	µg/L	<10	<10	<10
Chloromethane	µg/L	<10	<10	<10
Vinyl Chloride	µg/L	<10	<10	<10
Bromomethane	µg/L	<10	<10	<10
Chloroethane	µg/L	<10	<10	<10
Trichlorofluoromethane	µg/L	<10	<10	<10
1,1-Dichloroethene	µg/L	<1	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1	<1
1,1-dichloroethane	µg/L	<1	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1
Chloroform	µg/L	<1	<1	8
2,2-dichloropropane	µg/L	<1	<1	<1
1,2-dichloroethane	µg/L	<1	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1	<1
1,1-dichloropropene	µg/L	<1	<1	<1
Cyclohexane	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1
Benzene	µg/L	<1	<1	<1
Dibromomethane	µg/L	<1	<1	<1
1,2-dichloropropane	µg/L	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1
Bromodichloromethane	µg/L	<1	<1	2
trans-1,3-dichloropropene	µg/L	<1	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1	<1
Toluene	µg/L	<1	1	<1
1,3-dichloropropane	µg/L	<1	<1	<1
Dibromochloromethane	µg/L	<1	<1	<1
1,2-dibromoethane	µg/L	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1	<1
Chlorobenzene	µg/L	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1

VOCs in water				
Our Reference	UNITS	226319-6	226319-7	226319-10
Your Reference		SW06	BD1/20190917	Rinsate
Date Sampled		17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water
Bromoform	µg/L	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2
Styrene	µg/L	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1	<1
o-xylene	µg/L	<1	<1	<1
1,2,3-trichloropropane	µg/L	<1	<1	<1
Isopropylbenzene	µg/L	<1	<1	<1
Bromobenzene	µg/L	<1	<1	<1
n-propyl benzene	µg/L	<1	<1	<1
2-chlorotoluene	µg/L	<1	<1	<1
4-chlorotoluene	µg/L	<1	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1	<1
Tert-butyl benzene	µg/L	<1	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1	<1
Sec-butyl benzene	µg/L	<1	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1	<1
4-isopropyl toluene	µg/L	<1	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1	<1
n-butyl benzene	µg/L	<1	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1	<1
Hexachlorobutadiene	µg/L	<1	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1	<1
Surrogate Dibromofluoromethane	%	103	106	104
Surrogate toluene-d8	%	101	101	101
Surrogate 4-BFB	%	110	111	109

vTRH(C6-C10)/BTEXN in Water						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
TRH C_6 - C_9	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10}	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	102	101	101	105	104
Surrogate toluene-d8	%	100	100	99	100	100
Surrogate 4-BFB	%	113	110	113	112	109

vTRH(C6-C10)/BTEXN in Water				
Our Reference		226319-6	226319-8	226319-9
Your Reference	UNITS	SW06	TS	TB
Date Sampled		17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water
Date extracted	-	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019
TRH C_6 - C_9	µg/L	<10	[NA]	<10
TRH C_6 - C_{10}	µg/L	<10	[NA]	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	[NA]	<10
Benzene	µg/L	<1	104%	<1
Toluene	µg/L	<1	104%	<1
Ethylbenzene	µg/L	<1	118%	<1
m+p-xylene	µg/L	<2	114%	<2
o-xylene	µg/L	<1	115%	<1
Naphthalene	µg/L	<1	[NA]	<1
Surrogate Dibromofluoromethane	%	103	103	104
Surrogate toluene-d8	%	101	102	100
Surrogate 4-BFB	%	110	113	112

svTRH (C10-C40) in Water						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
TRH C_{10} - C_{14}	µg/L	<50	<50	51	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100	170	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100	110	<100	<100
TRH >C_{10} - C_{16}	µg/L	<50	<50	56	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50	<50	56	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100	240	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	71	63	91	84	77

svTRH (C10-C40) in Water		
Our Reference		226319-6
Your Reference	UNITS	SW06
Date Sampled		17/09/2019
Type of sample		Water
Date extracted	-	18/09/2019
Date analysed	-	18/09/2019
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	%	92

PAHs in Water - Low Level						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Naphthalene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	77	77	80	82	75

PAHs in Water - Low Level		
Our Reference		226319-6
Your Reference	UNITS	SW06
Date Sampled		17/09/2019
Type of sample		Water
Date extracted	-	18/09/2019
Date analysed	-	18/09/2019
Naphthalene	µg/L	<0.2
Acenaphthylene	µg/L	<0.1
Acenaphthene	µg/L	<0.1
Fluorene	µg/L	<0.1
Phenanthrene	µg/L	<0.1
Anthracene	µg/L	<0.1
Fluoranthene	µg/L	<0.1
Pyrene	µg/L	<0.1
Benzo(a)anthracene	µg/L	<0.1
Chrysene	µg/L	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2
Benzo(a)pyrene	µg/L	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	87

OCP in water - low level						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
HCB	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
alpha-BHC	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
gamma-BHC	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
beta-BHC	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
delta-BHC	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Aldrin	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor Epoxide	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
gamma-Chlordane	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
alpha-Chlordane	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Endosulfan I	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
pp-DDE	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Dieldrin	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Endrin	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
pp-DDD	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Endosulfan II	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
DDT	µg/L	<0.006	<0.006	<0.006	<0.006	<0.006
Endrin Aldehyde	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Endosulfan Sulphate	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Methoxychlor	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Surrogate TCMX	%	76	77	80	81	75

OCP in water - low level		
Our Reference		226319-6
Your Reference	UNITS	SW06
Date Sampled		17/09/2019
Type of sample		Water
Date extracted	-	18/09/2019
Date analysed	-	18/09/2019
HCB	µg/L	<0.01
alpha-BHC	µg/L	<0.01
gamma-BHC	µg/L	<0.01
beta-BHC	µg/L	<0.01
Heptachlor	µg/L	<0.01
delta-BHC	µg/L	<0.01
Aldrin	µg/L	<0.01
Heptachlor Epoxide	µg/L	<0.01
gamma-Chlordane	µg/L	<0.01
alpha-Chlordane	µg/L	<0.01
Endosulfan I	µg/L	<0.01
pp-DDE	µg/L	<0.01
Dieldrin	µg/L	<0.01
Endrin	µg/L	<0.01
pp-DDD	µg/L	<0.01
Endosulfan II	µg/L	<0.01
DDT	µg/L	<0.006
Endrin Aldehyde	µg/L	<0.01
Endosulfan Sulphate	µg/L	<0.01
Methoxychlor	µg/L	<0.01
Surrogate TCMX	%	88

PCBs in Water - Low Level						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Aroclor 1016	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	76	77	80	81	75

PCBs in Water - Low Level		
Our Reference		226319-6
Your Reference	UNITS	SW06
Date Sampled		17/09/2019
Type of sample		Water
Date extracted	-	18/09/2019
Date analysed	-	18/09/2019
Aroclor 1016	µg/L	<0.1
Aroclor 1221	µg/L	<0.1
Aroclor 1232	µg/L	<0.1
Aroclor 1242	µg/L	<0.1
Aroclor 1248	µg/L	<0.1
Aroclor 1254	µg/L	<0.1
Aroclor 1260	µg/L	<0.1
Surrogate TCMX	%	88

Total Phenolics in Water						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Total Phenolics (as Phenol)	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Total Phenolics in Water		
Our Reference		226319-6
Your Reference	UNITS	SW06
Date Sampled		17/09/2019
Type of sample		Water
Date extracted	-	18/09/2019
Date analysed	-	18/09/2019
Total Phenolics (as Phenol)	mg/L	<0.05

HM in water - total						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Date prepared	-					
Date analysed	-					
Arsenic-Total	µg/L					
Cadmium-Total	µg/L					
Chromium-Total	µg/L					
Copper-Total	µg/L					
Lead-Total	µg/L					
Mercury-Total	µg/L					
Nickel-Total	µg/L					
Zinc-Total	µg/L					

HM in water - total			
Our Reference		226319-6	226319-7
Your Reference	UNITS	SW06	BD1/20190917
Date Sampled		17/09/2019	17/09/2019
Type of sample		Water	Water
Date prepared	-		
Date analysed	-		
Arsenic-Total	µg/L		
Cadmium-Total	µg/L		
Chromium-Total	µg/L		
Copper-Total	µg/L		
Lead-Total	µg/L		
Mercury-Total	µg/L		
Nickel-Total	µg/L		
Zinc-Total	µg/L		

Cations in water Dissolved						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Date digested	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Calcium - Dissolved	mg/L	12	19	57	26	38
Magnesium - Dissolved	mg/L	3.5	13	34	17	26
Hardness	mgCaCO 3 /L	45	100	280	140	200

Cations in water Dissolved		
Our Reference		226319-6
Your Reference	UNITS	SW06
Date Sampled		17/09/2019
Type of sample		Water
Date digested	-	18/09/2019
Date analysed	-	18/09/2019
Calcium - Dissolved	mg/L	12
Magnesium - Dissolved	mg/L	3.8
Hardness	mgCaCO 3 /L	45

Miscellaneous Inorganics						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Ammonia as N in water	mg/L	1.1	0.12	0.60	0.050	0.39
Total Cyanide	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004
Chloride, Cl	mg/L	23	69	230	110	230
Sulphate, SO4	mg/L	9	38	44	55	41
Nitrite as N in water	mg/L	0.054	0.042	0.029	<0.005	0.052
Nitrate as N in water	mg/L	6.4	4.7	0.11	0.090	0.93
Phosphate as P in water	mg/L	0.17	0.41	0.087	0.019	0.035

Miscellaneous Inorganics		
Our Reference		226319-6
Your Reference	UNITS	SW06
Date Sampled		17/09/2019
Type of sample		Water
Date prepared	-	18/09/2019
Date analysed	-	18/09/2019
Ammonia as N in water	mg/L	0.17
Total Cyanide	mg/L	<0.004
Chloride, Cl	mg/L	15
Sulphate, SO4	mg/L	11
Nitrite as N in water	mg/L	0.049
Nitrate as N in water	mg/L	10
Phosphate as P in water	mg/L	0.33

Method ID	Methodology Summary
Inorg-014	Cyanide - free, total, weak acid dissociable by segmented flow analyser (in line dialysis with colourimetric finish). Solids/Filters and sorbents are extracted in a caustic media prior to analysis. Impingers are pH adjsuted as required prior to analysis. Cyanides amenable to Chlorination - samples are analysed untreated and treated with hyperchlorite to assess the potential for chlorination of cyanide forms. Based on APHA latest edition, 4500-CN_G,H.
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	Nitrate - determined colourimetrically. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-055	Nitrite - determined colourimetrically based on APHA latest edition NO2- B. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a KCl extraction.
Inorg-060	Phosphate determined colourimetrically based on EPA365.1 and APHA latest edition 4500 P E. Waters samples are filtered on receipt prior to analysis. 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. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
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-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.

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Date analysed	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Dichlorodifluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Vinyl Chloride	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromomethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichlorofluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-Dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trans-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Cis-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroform	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	92	[NT]
2,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	83	[NT]
1,1,1-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	92	[NT]
1,1-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Cyclohexane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Carbon tetrachloride	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibromomethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Bromodichloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	89	[NT]
trans-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
cis-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	89	[NT]
1,2-dibromoethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Tetrachloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
1,1,1,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromoform	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
m+p-xylene	µg/L	2	Org-013	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Styrene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
o-xylene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Isopropylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-propyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3,5-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Tert-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Sec-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,4-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-isopropyl toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dibromo-3-chloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Hexachlorobutadiene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-013	99	[NT]	[NT]	[NT]	[NT]	103	[NT]
Surrogate toluene-d8	%		Org-013	100	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate 4-BFB	%		Org-013	108	[NT]	[NT]	[NT]	[NT]	110	[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	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Date analysed	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
TRH C_6 - C_9	µg/L	10	Org-016	<10	[NT]	[NT]	[NT]	[NT]	103	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-016	<10	[NT]	[NT]	[NT]	[NT]	103	[NT]
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	110	[NT]
m+p-xylene	µg/L	2	Org-016	<2	[NT]	[NT]	[NT]	[NT]	109	[NT]
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Naphthalene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-016	99	[NT]	[NT]	[NT]	[NT]	103	[NT]
Surrogate toluene-d8	%		Org-016	100	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate 4-BFB	%		Org-016	108	[NT]	[NT]	[NT]	[NT]	110	[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	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Date analysed	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	82	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	71	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	72	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	82	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	71	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	72	[NT]
Surrogate o-Terphenyl	%		Org-003	97	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: PAHs in Water - Low Level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Date analysed	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Naphthalene	µg/L	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	80	[NT]
Acenaphthylene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	82	[NT]
Phenanthrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	77	[NT]
Anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	68	[NT]
Pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	70	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	77	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	84	[NT]	[NT]	[NT]	[NT]	80	[NT]

QUALITY CONTROL: OCP in water - low level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Date analysed	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
HCB	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-BHC	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	71	[NT]
gamma-BHC	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	70	[NT]
Heptachlor	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	76	[NT]
delta-BHC	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	72	[NT]
Heptachlor Epoxide	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	79	[NT]
gamma-Chlordane	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-Chlordane	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	75	[NT]
Dieldrin	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	80	[NT]
Endrin	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	79	[NT]
pp-DDD	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	73	[NT]
Endosulfan II	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
DDT	µg/L	0.006	Org-005	<0.006	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endrin Aldehyde	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	72	[NT]
Methoxychlor	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-005	82	[NT]	[NT]	[NT]	[NT]	75	[NT]

QUALITY CONTROL: PCBs in Water - Low Level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Date analysed	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Aroclor 1016	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	71	[NT]
Aroclor 1260	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-006	82	[NT]	[NT]	[NT]	[NT]	75	[NT]

QUALITY CONTROL: Total Phenolics in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	226319-2
Date extracted	-			18/09/2019	1	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Date analysed	-			18/09/2019	1	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Total Phenolics (as Phenol)	mg/L	0.05	Inorg-031	<0.05	1	<0.05	<0.05	0	107	98

QUALITY CONTROL: Cations in water Dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date digested	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Date analysed	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Calcium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	[NT]	[NT]	100	[NT]
Magnesium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	226319-2
Date prepared	-			18/09/2019	1	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Date analysed	-			18/09/2019	1	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	1	1.1	1.1	0	106	83
Total Cyanide	mg/L	0.004	Inorg-014	<0.004	1	<0.004	<0.004	0	105	91
Chloride, Cl	mg/L	1	Inorg-081	<1	1	23	[NT]		99	[NT]
Sulphate, SO4	mg/L	1	Inorg-081	<1	1	9	[NT]		91	[NT]
Nitrite as N in water	mg/L	0.005	Inorg-055	<0.005	1	0.054	0.054	0	112	97
Nitrate as N in water	mg/L	0.005	Inorg-055	<0.005	1	6.4	6.4	0	98	85
Phosphate as P in water	mg/L	0.005	Inorg-060	<0.005	1	0.17	0.18	6	110	90

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.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Report Comments

Dissolved Metals: no filtered, preserved sample was received, therefore the unpreserved sample was filtered through 0.45µm filter at the lab.
Note: there is a possibility some elements may be underestimated.

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CERTIFICATE OF ANALYSIS 226319

Client Details

Client	Douglas Partners Pty Ltd
Attention	Paul Gorman
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**84822.02, Eastern Creek**
Number of Samples	10 Water
Date samples received	17/09/2019
Date completed instructions received	17/09/2019

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	19/09/2019
Date of Issue	19/09/2019

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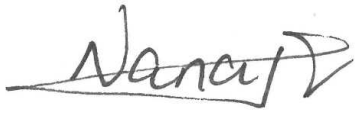
Results Approved By
Diego Bigolin, Team Leader, Inorganics
Jaimie Loa-Kum-Cheung, Metals Supervisor
Nick Sarlamis, Inorganics Supervisor
Steven Luong, Organics Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

VOCs in water						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Dichlorodifluoromethane	µg/L	<10	<10	<10	<10	<10
Chloromethane	µg/L	<10	<10	<10	<10	<10
Vinyl Chloride	µg/L	<10	<10	<10	<10	<10
Bromomethane	µg/L	<10	<10	<10	<10	<10
Chloroethane	µg/L	<10	<10	<10	<10	<10
Trichlorofluoromethane	µg/L	<10	<10	<10	<10	<10
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
1,1-dichloroethane	µg/L	<1	<1	<1	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1
2,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
1,2-dichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-dichloropropene	µg/L	<1	<1	<1	<1	<1
Cyclohexane	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Benzene	µg/L	<1	<1	<1	<1	<1
Dibromomethane	µg/L	<1	<1	<1	<1	<1
1,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<1	<1	<1	<1	<1
trans-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	1	<1	<1	<1	<1
1,3-dichloropropane	µg/L	<1	<1	<1	<1	<1
Dibromochloromethane	µg/L	<1	<1	<1	<1	<1
1,2-dibromoethane	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1

VOCs in water						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Bromoform	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
Styrene	µg/L	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
o-xylene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichloropropane	µg/L	<1	<1	<1	<1	<1
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1
Bromobenzene	µg/L	<1	<1	<1	<1	<1
n-propyl benzene	µg/L	<1	<1	<1	<1	<1
2-chlorotoluene	µg/L	<1	<1	<1	<1	<1
4-chlorotoluene	µg/L	<1	<1	<1	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
Tert-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
Sec-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
4-isopropyl toluene	µg/L	<1	<1	4	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
n-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	102	101	101	105	104
Surrogate toluene-d8	%	100	100	99	100	100
Surrogate 4-BFB	%	113	110	113	112	109

VOCs in water				
Our Reference		226319-6	226319-7	226319-10
Your Reference	UNITS	SW06	BD1/20190917	Rinsate
Date Sampled		17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water
Date extracted	-	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019
Dichlorodifluoromethane	µg/L	<10	<10	<10
Chloromethane	µg/L	<10	<10	<10
Vinyl Chloride	µg/L	<10	<10	<10
Bromomethane	µg/L	<10	<10	<10
Chloroethane	µg/L	<10	<10	<10
Trichlorofluoromethane	µg/L	<10	<10	<10
1,1-Dichloroethene	µg/L	<1	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1	<1
1,1-dichloroethane	µg/L	<1	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1
Chloroform	µg/L	<1	<1	8
2,2-dichloropropane	µg/L	<1	<1	<1
1,2-dichloroethane	µg/L	<1	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1	<1
1,1-dichloropropene	µg/L	<1	<1	<1
Cyclohexane	µg/L	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1
Benzene	µg/L	<1	<1	<1
Dibromomethane	µg/L	<1	<1	<1
1,2-dichloropropane	µg/L	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1
Bromodichloromethane	µg/L	<1	<1	2
trans-1,3-dichloropropene	µg/L	<1	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1	<1
Toluene	µg/L	<1	1	<1
1,3-dichloropropane	µg/L	<1	<1	<1
Dibromochloromethane	µg/L	<1	<1	<1
1,2-dibromoethane	µg/L	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1	<1
Chlorobenzene	µg/L	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1

VOCs in water				
Our Reference	UNITS	226319-6	226319-7	226319-10
Your Reference		SW06	BD1/20190917	Rinsate
Date Sampled		17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water
Bromoform	µg/L	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2
Styrene	µg/L	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1	<1
o-xylene	µg/L	<1	<1	<1
1,2,3-trichloropropane	µg/L	<1	<1	<1
Isopropylbenzene	µg/L	<1	<1	<1
Bromobenzene	µg/L	<1	<1	<1
n-propyl benzene	µg/L	<1	<1	<1
2-chlorotoluene	µg/L	<1	<1	<1
4-chlorotoluene	µg/L	<1	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1	<1
Tert-butyl benzene	µg/L	<1	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1	<1
Sec-butyl benzene	µg/L	<1	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1	<1
4-isopropyl toluene	µg/L	<1	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1	<1
n-butyl benzene	µg/L	<1	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1	<1
Hexachlorobutadiene	µg/L	<1	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1	<1
Surrogate Dibromofluoromethane	%	103	106	104
Surrogate toluene-d8	%	101	101	101
Surrogate 4-BFB	%	110	111	109

vTRH(C6-C10)/BTEXN in Water						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
TRH C_6 - C_9	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10}	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	102	101	101	105	104
Surrogate toluene-d8	%	100	100	99	100	100
Surrogate 4-BFB	%	113	110	113	112	109

vTRH(C6-C10)/BTEXN in Water				
Our Reference		226319-6	226319-8	226319-9
Your Reference	UNITS	SW06	TS	TB
Date Sampled		17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water
Date extracted	-	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019
TRH C_6 - C_9	µg/L	<10	[NA]	<10
TRH C_6 - C_{10}	µg/L	<10	[NA]	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	[NA]	<10
Benzene	µg/L	<1	104%	<1
Toluene	µg/L	<1	104%	<1
Ethylbenzene	µg/L	<1	118%	<1
m+p-xylene	µg/L	<2	114%	<2
o-xylene	µg/L	<1	115%	<1
Naphthalene	µg/L	<1	[NA]	<1
Surrogate Dibromofluoromethane	%	103	103	104
Surrogate toluene-d8	%	101	102	100
Surrogate 4-BFB	%	110	113	112

svTRH (C10-C40) in Water						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
TRH C_{10} - C_{14}	µg/L	<50	<50	51	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100	170	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100	110	<100	<100
TRH >C_{10} - C_{16}	µg/L	<50	<50	56	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50	<50	56	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100	240	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	71	63	91	84	77

svTRH (C10-C40) in Water		
Our Reference		226319-6
Your Reference	UNITS	SW06
Date Sampled		17/09/2019
Type of sample		Water
Date extracted	-	18/09/2019
Date analysed	-	18/09/2019
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	%	92

PAHs in Water - Low Level						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Naphthalene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	77	77	80	82	75

PAHs in Water - Low Level		
Our Reference		226319-6
Your Reference	UNITS	SW06
Date Sampled		17/09/2019
Type of sample		Water
Date extracted	-	18/09/2019
Date analysed	-	18/09/2019
Naphthalene	µg/L	<0.2
Acenaphthylene	µg/L	<0.1
Acenaphthene	µg/L	<0.1
Fluorene	µg/L	<0.1
Phenanthrene	µg/L	<0.1
Anthracene	µg/L	<0.1
Fluoranthene	µg/L	<0.1
Pyrene	µg/L	<0.1
Benzo(a)anthracene	µg/L	<0.1
Chrysene	µg/L	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2
Benzo(a)pyrene	µg/L	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	87

OCP in water - low level						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
HCB	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
alpha-BHC	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
gamma-BHC	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
beta-BHC	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
delta-BHC	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Aldrin	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor Epoxide	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
gamma-Chlordane	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
alpha-Chlordane	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Endosulfan I	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
pp-DDE	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Dieldrin	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Endrin	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
pp-DDD	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Endosulfan II	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
DDT	µg/L	<0.006	<0.006	<0.006	<0.006	<0.006
Endrin Aldehyde	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Endosulfan Sulphate	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Methoxychlor	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Surrogate TCMX	%	76	77	80	81	75

OCP in water - low level		
Our Reference		226319-6
Your Reference	UNITS	SW06
Date Sampled		17/09/2019
Type of sample		Water
Date extracted	-	18/09/2019
Date analysed	-	18/09/2019
HCB	µg/L	<0.01
alpha-BHC	µg/L	<0.01
gamma-BHC	µg/L	<0.01
beta-BHC	µg/L	<0.01
Heptachlor	µg/L	<0.01
delta-BHC	µg/L	<0.01
Aldrin	µg/L	<0.01
Heptachlor Epoxide	µg/L	<0.01
gamma-Chlordane	µg/L	<0.01
alpha-Chlordane	µg/L	<0.01
Endosulfan I	µg/L	<0.01
pp-DDE	µg/L	<0.01
Dieldrin	µg/L	<0.01
Endrin	µg/L	<0.01
pp-DDD	µg/L	<0.01
Endosulfan II	µg/L	<0.01
DDT	µg/L	<0.006
Endrin Aldehyde	µg/L	<0.01
Endosulfan Sulphate	µg/L	<0.01
Methoxychlor	µg/L	<0.01
Surrogate TCMX	%	88

PCBs in Water - Low Level						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Aroclor 1016	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	76	77	80	81	75

PCBs in Water - Low Level		
Our Reference		226319-6
Your Reference	UNITS	SW06
Date Sampled		17/09/2019
Type of sample		Water
Date extracted	-	18/09/2019
Date analysed	-	18/09/2019
Aroclor 1016	µg/L	<0.1
Aroclor 1221	µg/L	<0.1
Aroclor 1232	µg/L	<0.1
Aroclor 1242	µg/L	<0.1
Aroclor 1248	µg/L	<0.1
Aroclor 1254	µg/L	<0.1
Aroclor 1260	µg/L	<0.1
Surrogate TCMX	%	88

Total Phenolics in Water						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Total Phenolics (as Phenol)	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Total Phenolics in Water		
Our Reference		226319-6
Your Reference	UNITS	SW06
Date Sampled		17/09/2019
Type of sample		Water
Date extracted	-	18/09/2019
Date analysed	-	18/09/2019
Total Phenolics (as Phenol)	mg/L	<0.05

HM in water - total						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Date analysed	-	19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Arsenic-Total	µg/L	1	1	1	<1	2
Cadmium-Total	µg/L	0.2	<0.1	<0.1	<0.1	<0.1
Chromium-Total	µg/L	<1	3	2	<1	3
Copper-Total	µg/L	11	8	7	2	8
Lead-Total	µg/L	2	4	4	<1	6
Mercury-Total	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel-Total	µg/L	2	3	2	1	4
Zinc-Total	µg/L	240	450	35	12	34

HM in water - total			
Our Reference		226319-6	226319-7
Your Reference	UNITS	SW06	BD1/20190917
Date Sampled		17/09/2019	17/09/2019
Type of sample		Water	Water
Date prepared	-	19/09/2019	19/09/2019
Date analysed	-	19/09/2019	19/09/2019
Arsenic-Total	µg/L	<1	1
Cadmium-Total	µg/L	<0.1	0.2
Chromium-Total	µg/L	<1	<1
Copper-Total	µg/L	8	9
Lead-Total	µg/L	1	1
Mercury-Total	µg/L	<0.05	<0.05
Nickel-Total	µg/L	1	2
Zinc-Total	µg/L	1,500	230

Cations in water Dissolved						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Date digested	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Calcium - Dissolved	mg/L	12	19	57	26	38
Magnesium - Dissolved	mg/L	3.5	13	34	17	26
Hardness	mgCaCO 3 /L	45	100	280	140	200

Cations in water Dissolved		
Our Reference		226319-6
Your Reference	UNITS	SW06
Date Sampled		17/09/2019
Type of sample		Water
Date digested	-	18/09/2019
Date analysed	-	18/09/2019
Calcium - Dissolved	mg/L	12
Magnesium - Dissolved	mg/L	3.8
Hardness	mgCaCO 3 /L	45

Miscellaneous Inorganics						
Our Reference		226319-1	226319-2	226319-3	226319-4	226319-5
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Date analysed	-	18/09/2019	18/09/2019	18/09/2019	18/09/2019	18/09/2019
Ammonia as N in water	mg/L	1.1	0.12	0.60	0.050	0.39
Total Cyanide	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004
Chloride, Cl	mg/L	23	69	230	110	230
Sulphate, SO4	mg/L	9	38	44	55	41
Nitrite as N in water	mg/L	0.054	0.042	0.029	<0.005	0.052
Nitrate as N in water	mg/L	6.4	4.7	0.11	0.090	0.93
Phosphate as P in water	mg/L	0.17	0.41	0.087	0.019	0.035

Miscellaneous Inorganics		
Our Reference		226319-6
Your Reference	UNITS	SW06
Date Sampled		17/09/2019
Type of sample		Water
Date prepared	-	18/09/2019
Date analysed	-	18/09/2019
Ammonia as N in water	mg/L	0.17
Total Cyanide	mg/L	<0.004
Chloride, Cl	mg/L	15
Sulphate, SO4	mg/L	11
Nitrite as N in water	mg/L	0.049
Nitrate as N in water	mg/L	10
Phosphate as P in water	mg/L	0.33

Method ID	Methodology Summary
Inorg-014	Cyanide - free, total, weak acid dissociable by segmented flow analyser (in line dialysis with colourimetric finish). Solids/Filters and sorbents are extracted in a caustic media prior to analysis. Impingers are pH adjsuted as required prior to analysis. Cyanides amenable to Chlorination - samples are analysed untreated and treated with hyperchlorite to assess the potential for chlorination of cyanide forms. Based on APHA latest edition, 4500-CN_G,H.
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	Nitrate - determined colourimetrically. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-055	Nitrite - determined colourimetrically based on APHA latest edition NO2- B. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a KCl extraction.
Inorg-060	Phosphate determined colourimetrically based on EPA365.1 and APHA latest edition 4500 P E. Waters samples are filtered on receipt prior to analysis. 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. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
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-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.

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Date analysed	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Dichlorodifluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Vinyl Chloride	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromomethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichlorofluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-Dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trans-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Cis-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroform	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	92	[NT]
2,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	83	[NT]
1,1,1-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	92	[NT]
1,1-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Cyclohexane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Carbon tetrachloride	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibromomethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Bromodichloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	89	[NT]
trans-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
cis-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	89	[NT]
1,2-dibromoethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Tetrachloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
1,1,1,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromoform	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
m+p-xylene	µg/L	2	Org-013	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Styrene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
o-xylene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Isopropylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-propyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3,5-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Tert-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Sec-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,4-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-isopropyl toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dibromo-3-chloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Hexachlorobutadiene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-013	99	[NT]	[NT]	[NT]	[NT]	103	[NT]
Surrogate toluene-d8	%		Org-013	100	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate 4-BFB	%		Org-013	108	[NT]	[NT]	[NT]	[NT]	110	[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	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Date analysed	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
TRH C_6 - C_9	µg/L	10	Org-016	<10	[NT]	[NT]	[NT]	[NT]	103	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-016	<10	[NT]	[NT]	[NT]	[NT]	103	[NT]
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	110	[NT]
m+p-xylene	µg/L	2	Org-016	<2	[NT]	[NT]	[NT]	[NT]	109	[NT]
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Naphthalene	µg/L	1	Org-013	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-016	99	[NT]	[NT]	[NT]	[NT]	103	[NT]
Surrogate toluene-d8	%		Org-016	100	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate 4-BFB	%		Org-016	108	[NT]	[NT]	[NT]	[NT]	110	[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	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Date analysed	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	82	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	71	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	72	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	82	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	71	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	72	[NT]
Surrogate o-Terphenyl	%		Org-003	97	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: PAHs in Water - Low Level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Date analysed	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Naphthalene	µg/L	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	80	[NT]
Acenaphthylene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	82	[NT]
Phenanthrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	77	[NT]
Anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	68	[NT]
Pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	70	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-012	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	77	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	84	[NT]	[NT]	[NT]	[NT]	80	[NT]

QUALITY CONTROL: OCP in water - low level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Date analysed	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
HCB	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-BHC	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	71	[NT]
gamma-BHC	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	70	[NT]
Heptachlor	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	76	[NT]
delta-BHC	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	72	[NT]
Heptachlor Epoxide	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	79	[NT]
gamma-Chlordane	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-Chlordane	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	75	[NT]
Dieldrin	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	80	[NT]
Endrin	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	79	[NT]
pp-DDD	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	73	[NT]
Endosulfan II	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
DDT	µg/L	0.006	Org-005	<0.006	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endrin Aldehyde	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	72	[NT]
Methoxychlor	µg/L	0.01	Org-005	<0.01	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-005	82	[NT]	[NT]	[NT]	[NT]	75	[NT]

QUALITY CONTROL: PCBs in Water - Low Level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Date analysed	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Aroclor 1016	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	71	[NT]
Aroclor 1260	µg/L	0.1	Org-006	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-006	82	[NT]	[NT]	[NT]	[NT]	75	[NT]

QUALITY CONTROL: Total Phenolics in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	226319-2
Date extracted	-			18/09/2019	1	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Date analysed	-			18/09/2019	1	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Total Phenolics (as Phenol)	mg/L	0.05	Inorg-031	<0.05	1	<0.05	<0.05	0	107	98

QUALITY CONTROL: HM in water - total						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	226319-2
Date prepared	-			19/09/2019	1	19/09/2019	19/09/2019		19/09/2019	19/09/2019
Date analysed	-			19/09/2019	1	19/09/2019	19/09/2019		19/09/2019	19/09/2019
Arsenic-Total	µg/L	1	Metals-022	<1	1	1	1	0	101	107
Cadmium-Total	µg/L	0.1	Metals-022	<0.1	1	0.2	0.2	0	102	107
Chromium-Total	µg/L	1	Metals-022	<1	1	<1	<1	0	103	106
Copper-Total	µg/L	1	Metals-022	<1	1	11	11	0	109	107
Lead-Total	µg/L	1	Metals-022	<1	1	2	3	40	102	103
Mercury-Total	µg/L	0.05	Metals-021	<0.05	1	<0.05	<0.05	0	105	98
Nickel-Total	µg/L	1	Metals-022	<1	1	2	2	0	98	108
Zinc-Total	µg/L	1	Metals-022	<1	1	240	250	4	101	#

QUALITY CONTROL: Cations in water Dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date digested	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Date analysed	-			18/09/2019	[NT]	[NT]	[NT]	[NT]	18/09/2019	[NT]
Calcium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	[NT]	[NT]	100	[NT]
Magnesium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	226319-2
Date prepared	-			18/09/2019	1	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Date analysed	-			18/09/2019	1	18/09/2019	18/09/2019		18/09/2019	18/09/2019
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	1	1.1	1.1	0	106	83
Total Cyanide	mg/L	0.004	Inorg-014	<0.004	1	<0.004	<0.004	0	105	91
Chloride, Cl	mg/L	1	Inorg-081	<1	1	23	[NT]		99	[NT]
Sulphate, SO4	mg/L	1	Inorg-081	<1	1	9	[NT]		91	[NT]
Nitrite as N in water	mg/L	0.005	Inorg-055	<0.005	1	0.054	0.054	0	112	97
Nitrate as N in water	mg/L	0.005	Inorg-055	<0.005	1	6.4	6.4	0	98	85
Phosphate as P in water	mg/L	0.005	Inorg-060	<0.005	1	0.17	0.18	6	110	90

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.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Report Comments

Dissolved Metals: no filtered, preserved sample was received, therefore the unpreserved sample was filtered through 0.45µm filter at the lab.
Note: there is a possibility some elements may be underestimated.

8 HM in water - total - # Percent recovery is not possible to report due to the high concentration of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	84822.02	**Suburb:**	Eastern Creek	**To:**	Lab name
Project Name:	Eastern Creek	**Order Number**			
Project Manager:	JS	**Sampler:**	JS	**Attn:**	
Emails:	el.james-hall;jack.snowden@douglaspartners.com.	paul.gorman@douglaspartners.com.au		**Phone:**	
Date Required:	24 hr TAT			**Email:**	
Prior Storage:	☐ Eski	Do samples contain 'potential' HBM?	Yes ☐	No ☐	(If YES, then handle, transport and store in accordance with FPM HAZID)

Sample ID	Lab ID	Date Sampled	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: Combination (HM8, TRH, BTEX, PAH (LOW LVL), OCP (LOW LVL), PCB (LOW LVL), PHENOLS				VOCs	Hardness	Ammonia/Cyanide	Anions (Cl, SO4, NO2, NO3, PO4)	8HM, VOCs	Notes/preservation
SW01	1	17/09/19	w	g/p	x	x	x	x	x	x	x	x		
SW02	2	17/09/19	w	g/p	x	x	x	x	x	x	x	x		
SW03	3	17/09/19	w	g/p	x	x	x	x	x	x	x	x		
SW04	4	17/09/19	w	g/p	x	x	x	x	x	x	x	x		
SW05	5	17/09/19	w	g/p	x	x	x	x	x	x	x	x		
SW06	6	17/09/19	w	g/p	x	x	x	x	x	x	x	x		
BD1/20190917	7	17/09/19	w	g/p									x	
TS/TB	8,9	-	-	-										Test: TRH/BTEX
Rinsate	10	17/09/19	w	g										Test: VOC
PQL (S) mg/kg													**ANZECC PQLs req'd for all water analytes** ☐	

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
ENVIROLAB

Job No: 226319
Date Received: 17/9/19
Time Received: 16:05
Received by: MO
Temp: Cool/Ambient 10.5°C
Cooling: Ice/Icepack
Security: Intact/Broken/None

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Lab Report/Reference No: 226319

Total number of samples in container: | **Relinquished by:** | **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd | **Address:** | **Phone:** | **Fax:**

Signed: JS | **Received by:** Michael Opie | **Date & Time:** 17/9/19 16:05

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	Douglas Partners Pty Ltd
Attention	Paul Gorman

Sample Login Details

Your reference	84822.02, Eastern Creek
Envirolab Reference	226319
Date Sample Received	17/09/2019
Date Instructions Received	17/09/2019
Date Results Expected to be Reported	24/09/2019

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	10 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	10.5
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 water	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water - Low Level	OCP in water - low level	PCBs in Water - Low Level	Total Phenolicsin Water	HM in water - dissolved	Cations in water Dissolved	Ammonia as N in water	Total Cyanide	Chloride, Cl	Sulphate, SO4	Nitrite as N in water	Nitrate as N in water	Phosphate as P in water
SW01	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SW02	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SW03	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SW04	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SW05	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SW06	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BD1/20190917	✓							✓								
TS		✓														
TB		✓														
Rinsate	✓															

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.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
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customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 226861

Client Details

Client	Douglas Partners Pty Ltd
Attention	Paul Gorman, Joel Hall, Jack Snowden
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**Green Waratah 84822.02**
Number of Samples	6x air canister
Date samples received	24/09/2019
Date completed instructions received	24/09/2019

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	25/09/2019
Date of Issue	25/09/2019

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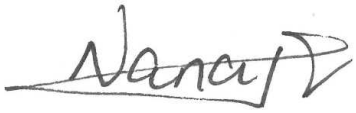
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Chris Guo, Senior Chemist, Air
Jeremy Faircloth, Operations Manager, Sydney

Authorised By



Nancy Zhang, Laboratory Manager

TO15 in Canisters/Bags						
Our Reference		226861-1	226861-2	226861-3	226861-4	226861-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		AIR CANISTER	AIR CANISTER	AIR CANISTER	AIR CANISTER	AIR CANISTER
Air Kit Security No.		3301	2260	2467	3515	3300
Vacuum before Shipment	Hg"	-30	-30	-30	-30	-30
Vacuum before Analysis	Hg"	-6	-7	-5	-4	-6
Date prepared	-	24/09/2019	24/09/2019	24/09/2019	24/09/2019	24/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Propylene	ppbv	6.1	6.8	9.4	72	56
Dichlorodifluoromethane	ppbv	<1	<1	<1	<0.5	<0.5
Chloromethane	ppbv	<1	<1	<1	<1	<1
1,2-Dichlorotetrafluoroethane	ppbv	<1	<1	<1	<0.5	<0.5
Vinyl chloride	ppbv	<1	<1	<1	<1	<0.5
1,3-Butadiene	ppbv	<1	<1	<1	<0.5	<0.5
Bromomethane	ppbv	<1	<1	<1	<0.5	<0.5
Chloroethane	ppbv	<1	<1	<1	89	20
Ethanol	ppbv	20	20	20	20	20
Acrolein	ppbv	<10	<10	<10	<5	<5
Trichlorofluoromethane (Freon 11)	ppbv	<1	<1	<1	<0.5	<0.5
Acetone	ppbv	40	40	50	40	52
Isopropyl Alcohol	ppbv	53	40	40	60	30
1,1-Dichloroethene	ppbv	<1	<1	<1	0.8	<0.5
1,1,2-Trichlorotrifluoroethane	ppbv	<1	<1	<1	<0.5	<0.5
Methylene chloride (Dichloromethane)	ppbv	62	56	51	40	59
Carbon Disulfide	ppbv	<10	<10	<10	<5	<5
trans-1,2-dichloroethene	ppbv	<1	<1	<1	<0.5	<0.5
MTBE	ppbv	<1	<1	<1	<0.5	<0.5
1,1- Dichloroethane	ppbv	<1	<1	<1	14	3
Vinyl Acetate	ppbv	<1	<1	<1	<0.5	<0.5
MEK	ppbv	<10	<10	<10	<5	<5
Hexane	ppbv	31	30	24	38	9.1
cis-1,2-Dichloroethene	ppbv	<1	<1	<1	<0.5	<0.5
Ethyl Acetate	ppbv	5.0	4	4	3	3
Chloroform	ppbv	<1	<1	<1	<0.5	<0.5
Tetrahydrofuran	ppbv	17	10	7.3	20	11
1,1,1-Trichloroethane	ppbv	<1	<1	<1	13	2
1,2-Dichloroethane	ppbv	<1	<1	<1	<0.5	<0.5
Benzene	ppbv	150	130	130	88	53
Carbon tetrachloride	ppbv	<1	<1	<1	<0.5	<0.5

TO15 in Canisters/Bags						
Our Reference		226861-1	226861-2	226861-3	226861-4	226861-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		AIR CANISTER	AIR CANISTER	AIR CANISTER	AIR CANISTER	AIR CANISTER
Air Kit Security No.		3301	2260	2467	3515	3300
Cyclohexane	ppbv	160	150	130	120	54
Heptane	ppbv	200	180	160	150	65
Trichloroethene	ppbv	<1	<1	<1	<0.5	<0.5
1,2-Dichloropropane	ppbv	<1	<1	<1	<0.5	<0.5
1,4-Dioxane	ppbv	<1	<1	<1	<0.5	<0.5
Bromodichloromethane	ppbv	<1	<1	<1	<0.5	<0.5
Methyl Methacrylate	ppbv	<1	<1	<1	<0.5	<0.5
MIBK	ppbv	<10	<10	<10	<5	<5
cis-1,3-Dichloropropene	ppbv	<1	<1	<1	<0.5	<0.5
trans-1,3-Dichloropropene	ppbv	<1	<1	<1	<0.5	<0.5
Toluene	ppbv	1,300	1,300	1,200	590	590
1,1,2-Trichloroethane	ppbv	<1	<1	<1	<0.5	<0.5
Methyl Butyl Ketone	ppbv	<1	<1	<1	<0.5	<0.5
Dibromochloromethane	ppbv	<1	<1	<1	<0.5	<0.5
Tetrachloroethene	ppbv	<1	<1	<1	<0.5	<0.5
1,2-Dibromoethane	ppbv	<1	<1	<1	<0.5	<0.5
Chlorobenzene	ppbv	<1	<1	<1	<0.5	<0.5
Ethylbenzene	ppbv	120	150	130	61	67
m-& p-Xylene	ppbv	280	350	300	150	160
Styrene	ppbv	<1	1	<1	<0.5	<0.5
o-Xylene	ppbv	80	110	88	62	51
Bromoform	ppbv	<1	<1	<1	<0.5	<0.5
1,1,2,2-Tetrachloroethane	ppbv	<1	<1	<1	<0.5	<0.5
4-ethyl toluene	ppbv	7.9	10	8.6	6.5	5
1,3,5-Trimethylbenzene	ppbv	7.5	10	8.1	14	5.3
1,2,4-Trimethylbenzene	ppbv	12	16	13	23	8.5
1,3-Dichlorobenzene	ppbv	<1	<1	<1	<0.5	<0.5
Benzyl chloride	ppbv	<1	<1	<1	<0.5	<0.5
1,4-Dichlorobenzene	ppbv	<1	<1	<1	<0.5	<0.5
1,2-Dichlorobenzene	ppbv	<1	<1	<1	<0.5	<0.5
1,2,4-Trichlorobenzene	ppbv	<1	<1	<1	<0.5	<0.5
Naphthalene	ppbv	<1	<1	<1	<0.5	<0.5
Hexachloro- 1,3-butadiene	ppbv	<1	<1	<1	<0.5	<0.5
Surrogate-Bromochloromethane	% rec	106	111	111	113	116
Surrogate -1,4-Difluorobenzene	% rec	105	108	111	113	113
Surrogate-Chlorobenzene-D5	% rec	108	111	114	114	115

TO15 in Canisters/Bags		
Our Reference		226861-6
Your Reference	UNITS	BH208
Date Sampled		24/09/2019
Type of sample		AIR CANISTER
Air Kit Security No.		2242
Vacuum before Shipment	Hg"	-30
Vacuum before Analysis	Hg"	-6
Date prepared	-	24/09/2019
Date analysed	-	25/09/2019
Propylene	ppbv	8.0
Dichlorodifluoromethane	ppbv	<0.5
Chloromethane	ppbv	<1
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	20
Acrolein	ppbv	<5
Trichlorofluoromethane (Freon 11)	ppbv	<0.5
Acetone	ppbv	40
Isopropyl Alcohol	ppbv	30
1,1-Dichloroethene	ppbv	<0.5
1,1,2-Trichlorotrifluoroethane	ppbv	<0.5
Methylene chloride (Dichloromethane)	ppbv	66
Carbon Disulfide	ppbv	<5
trans-1,2-dichloroethene	ppbv	<0.5
MTBE	ppbv	<0.5
1,1- Dichloroethane	ppbv	<0.5
Vinyl Acetate	ppbv	<0.5
MEK	ppbv	<5
Hexane	ppbv	12
cis-1,2-Dichloroethene	ppbv	<0.5
Ethyl Acetate	ppbv	3
Chloroform	ppbv	<0.5
Tetrahydrofuran	ppbv	5.5
1,1,1-Trichloroethane	ppbv	<0.5
1,2-Dichloroethane	ppbv	<0.5
Benzene	ppbv	53
Carbon tetrachloride	ppbv	<0.5

TO15 in Canisters/Bags		
Our Reference		226861-6
Your Reference	UNITS	BH208
Date Sampled		24/09/2019
Type of sample		AIR CANISTER
Air Kit Security No.		2242
Cyclohexane	ppbv	59
Heptane	ppbv	66
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	<5
cis-1,3-Dichloropropene	ppbv	<0.5
trans-1,3-Dichloropropene	ppbv	<0.5
Toluene	ppbv	560
1,1,2-Trichloroethane	ppbv	<0.5
Methyl Butyl Ketone	ppbv	<0.5
Dibromochloromethane	ppbv	<0.5
Tetrachloroethene	ppbv	<0.5
1,2-Dibromoethane	ppbv	<0.5
Chlorobenzene	ppbv	<0.5
Ethylbenzene	ppbv	68
m-& p-Xylene	ppbv	170
Styrene	ppbv	<0.5
o-Xylene	ppbv	74
Bromoform	ppbv	<0.5
1,1,2,2-Tetrachloroethane	ppbv	<0.5
4-ethyl toluene	ppbv	7.2
1,3,5-Trimethylbenzene	ppbv	16
1,2,4-Trimethylbenzene	ppbv	27
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	116
Surrogate -1,4-Difluorobenzene	% rec	115
Surrogate-Chlorobenzene-D5	% rec	118

TO15 in Canisters ug/m3						
Our Reference		226861-1	226861-2	226861-3	226861-4	226861-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		AIR CANISTER	AIR CANISTER	AIR CANISTER	AIR CANISTER	AIR CANISTER
Air Kit Security No.		3301	2260	2467	3515	3300
Vacuum before Shipment	Hg"	-30	-30	-30	-30	-30
Vacuum before Analysis	Hg"	-6	-7	-5	-4	-6
Date prepared	-	24/09/2019	24/09/2019	24/09/2019	24/09/2019	24/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Propylene	µg/m³	10	12	16	120	96
Dichlorodifluoromethane	µg/m³	<4.9	<4.9	<4.9	<2.5	<2.5
Chloromethane	µg/m³	<2.1	<2.1	<2.1	<2.1	<2.1
1,2-Dichlorotetrafluoroethane	µg/m³	<4.9	<4.9	<4.9	<2.5	<2.5
Vinyl chloride	µg/m³	<2.6	<2.6	<2.6	<2.6	<1.3
1,3-Butadiene	µg/m³	<2.2	<2.2	<2.2	<1.1	<1.1
Bromomethane	µg/m³	<3.8	<3.8	<3.8	<1.9	<1.9
Chloroethane	µg/m³	<2.6	<2.6	<2.6	230	52
Ethanol	µg/m³	40	40	40	50	40
Acrolein	µg/m³	<23	<23	<23	<11	<11
Trichlorofluoromethane (Freon 11)	µg/m³	<5.6	<5.6	<5.6	<2.8	<2.8
Acetone	µg/m³	90	100	100	100	120
Isopropyl Alcohol	µg/m³	130	100	100	150	70
1,1-Dichloroethene	µg/m³	<4	<4	<4	3	<2
1,1,2-Trichlorotrifluoroethane	µg/m³	<7.7	<7.7	<7.7	<3.8	<3.8
Methylene chloride (Dichloromethane)	µg/m³	210	200	200	200	200
Carbon Disulfide	µg/m³	<31	<31	<31	<16	<16
trans-1,2-dichloroethene	µg/m³	<4	<4	<4	<2	<2
MTBE	µg/m³	<3.6	<3.6	<3.6	<1.8	<1.8
1,1- Dichloroethane	µg/m³	<4	<4	<4	59	10
Vinyl Acetate	µg/m³	<3.5	<3.5	<3.5	<1.8	<1.8
MEK	µg/m³	<29	<29	<29	<15	<15
Hexane	µg/m³	110	100	83	140	32
cis-1,2-Dichloroethene	µg/m³	<4	<4	<4	<2	<2
Ethyl Acetate	µg/m³	18	10	10	10	10
Chloroform	µg/m³	<4.9	<4.9	<4.9	<2.4	<2.4
Tetrahydrofuran	µg/m³	51	31	22	59	32
1,1,1-Trichloroethane	µg/m³	<5.5	<5.5	<5.5	70	8
1,2-Dichloroethane	µg/m³	<4	<4	<4	<2	<2
Benzene	µg/m³	470	420	400	280	170
Carbon tetrachloride	µg/m³	<6.3	<6.3	<6.3	<3.1	<3.1

TO15 in Canisters ug/m3						
Our Reference		226861-1	226861-2	226861-3	226861-4	226861-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		AIR CANISTER	AIR CANISTER	AIR CANISTER	AIR CANISTER	AIR CANISTER
Air Kit Security No.		3301	2260	2467	3515	3300
Cyclohexane	µg/m³	540	530	430	410	190
Heptane	µg/m³	820	750	660	620	270
Trichloroethene	µg/m³	<5.4	<5.4	<5.4	<2.7	<2.7
1,2-Dichloropropane	µg/m³	<4.6	<4.6	<4.6	<2.3	<2.3
1,4-Dioxane	µg/m³	<3.6	<3.6	<3.6	<1.8	<1.8
Bromodichloromethane	µg/m³	<6.7	<6.7	<6.7	<3.4	<3.4
Methyl Methacrylate	µg/m³	<4.1	<4.1	<4.1	<2	<2
MIBK	µg/m³	<41	<41	<41	<20	<20
cis-1,3-Dichloropropene	µg/m³	<4.5	<4.5	<4.5	<2.3	<2.3
trans-1,3-Dichloropropene	µg/m³	<4.5	<4.5	<4.5	<2.3	<2.3
Toluene	µg/m³	4,700	4,800	4,400	2,200	2,200
1,1,2-Trichloroethane	µg/m³	<5.5	<5.5	<5.5	<2.7	<2.7
Methyl Butyl Ketone	µg/m³	<4.1	<4.1	<4.1	<2	<2
Dibromochloromethane	µg/m³	<3.3	<3.3	<3.3	<1.6	<1.6
Tetrachloroethene	µg/m³	<6.8	<6.8	<6.8	<3.4	<3.4
1,2-Dibromoethane	µg/m³	<7.7	<7.7	<7.7	<3.8	<3.8
Chlorobenzene	µg/m³	<4.6	<4.6	<4.6	<2.3	<2.3
Ethylbenzene	µg/m³	530	630	550	260	290
m-& p-Xylene	µg/m³	1,200	1,500	1,300	670	680
Styrene	µg/m³	<4.3	5	<4.3	<2.1	<2.1
o-Xylene	µg/m³	350	460	380	270	220
Bromoform	µg/m³	<10	<10	<10	<5.2	<5.2
1,1,2,2-Tetrachloroethane	µg/m³	<6.9	<6.9	<6.9	<3.4	<3.4
4-ethyl toluene	µg/m³	39	51	42	32	20
1,3,5-Trimethylbenzene	µg/m³	37	49	40	66	26
1,2,4-Trimethylbenzene	µg/m³	58	77	65	110	42
1,3-Dichlorobenzene	µg/m³	<6	<6	<6	<3	<3
Benzyl chloride	µg/m³	<5.2	<5.2	<5.2	<2.6	<2.6
1,4-Dichlorobenzene	µg/m³	<6	<6	<6	<3	<3
1,2-Dichlorobenzene	µg/m³	<6	<6	<6	<3	<3
1,2,4-Trichlorobenzene	µg/m³	<7.4	<7.4	<7.4	<3.7	<3.7
Naphthalene	µg/m³	<5.2	<5.2	<5.2	<2.6	<2.6
Hexachloro- 1,3-butadiene	µg/m³	<11	<11	<11	<5.3	<5.3
Surrogate-Bromochloromethane	% rec	106	111	111	113	116
Surrogate -1,4-Difluorobenzene	% rec	105	108	111	113	113
Surrogate-Chlorobenzene-D5	% rec	108	111	114	114	115

TO15 in Canisters ug/m3		
Our Reference		226861-6
Your Reference	UNITS	BH208
Date Sampled		24/09/2019
Type of sample		AIR CANISTER
Air Kit Security No.		2242
Vacuum before Shipment	Hg"	-30
Vacuum before Analysis	Hg"	-6
Date prepared	-	24/09/2019
Date analysed	-	25/09/2019
Propylene	µg/m³	14
Dichlorodifluoromethane	µg/m³	<2.5
Chloromethane	µg/m³	<2.1
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	40
Acrolein	µg/m³	<11
Trichlorofluoromethane (Freon 11)	µg/m³	<2.8
Acetone	µg/m³	100
Isopropyl Alcohol	µg/m³	80
1,1-Dichloroethene	µg/m³	<2
1,1,2-Trichlorotrifluoroethane	µg/m³	<3.8
Methylene chloride (Dichloromethane)	µg/m³	230
Carbon Disulfide	µg/m³	<16
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	<15
Hexane	µg/m³	41
cis-1,2-Dichloroethene	µg/m³	<2
Ethyl Acetate	µg/m³	10
Chloroform	µg/m³	<2.4
Tetrahydrofuran	µg/m³	16
1,1,1-Trichloroethane	µg/m³	<2.7
1,2-Dichloroethane	µg/m³	<2
Benzene	µg/m³	170
Carbon tetrachloride	µg/m³	<3.1

TO15 in Canisters ug/m3		
Our Reference		226861-6
Your Reference	UNITS	BH208
Date Sampled		24/09/2019
Type of sample		AIR CANISTER
Air Kit Security No.		2242
Cyclohexane	µg/m³	200
Heptane	µg/m³	270
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	<20
cis-1,3-Dichloropropene	µg/m³	<2.3
trans-1,3-Dichloropropene	µg/m³	<2.3
Toluene	µg/m³	2,100
1,1,2-Trichloroethane	µg/m³	<2.7
Methyl Butyl Ketone	µg/m³	<2
Dibromochloromethane	µg/m³	<1.6
Tetrachloroethene	µg/m³	<3.4
1,2-Dibromoethane	µg/m³	<3.8
Chlorobenzene	µg/m³	<2.3
Ethylbenzene	µg/m³	300
m-& p-Xylene	µg/m³	750
Styrene	µg/m³	<2.1
o-Xylene	µg/m³	320
Bromoform	µg/m³	<5.2
1,1,2,2-Tetrachloroethane	µg/m³	<3.4
4-ethyl toluene	µg/m³	35
1,3,5-Trimethylbenzene	µg/m³	78
1,2,4-Trimethylbenzene	µg/m³	130
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	116
Surrogate -1,4-Difluorobenzene	% rec	115
Surrogate-Chlorobenzene-D5	% rec	118

TPH Air/ Air Phase Hydrocarbon						
Our Reference		226861-1	226861-2	226861-3	226861-4	226861-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		AIR CANISTER	AIR CANISTER	AIR CANISTER	AIR CANISTER	AIR CANISTER
Air Kit Security No.		3301	2260	2467	3515	3300
Date prepared	-	24/09/2019	24/09/2019	24/09/2019	24/09/2019	24/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
TPH C_5 - C_8 Aliphatic	µg/m³	39,000	40,000	34,000	25,000	20,000
TPH C_9 - C_{12} Aliphatic	µg/m³	880	890	870	430	450
TPH C_9 - C_{10} Aromatic	µg/m³	<200	240	<200	280	120
TPH C_6 - C_{10} - BTEX (F1)	µg/m³	43,000	40,000	37,000	27,000	19,000
TPH >C_{10} - C_{12} - Naphthalene (F2)	µg/m³	620	570	600	320	250

TPH Air/ Air Phase Hydrocarbon		
Our Reference		226861-6
Your Reference	UNITS	BH208
Date Sampled		24/09/2019
Type of sample		AIR CANISTER
Air Kit Security No.		2242
Date prepared	-	24/09/2019
Date analysed	-	25/09/2019
TPH C_5 - C_8 Aliphatic	µg/m³	17,000
TPH C_9 - C_{12} Aliphatic	µg/m³	1,100
TPH C_9 - C_{10} Aromatic	µg/m³	320
TPH C_6 - C_{10} - BTEX (F1)	µg/m³	20,000
TPH >C_{10} - C_{12} - Naphthalene (F2)	µg/m³	860

Permanent Gas analysis						
Our Reference		226861-1	226861-2	226861-3	226861-4	226861-5
Your Reference	UNITS	BH4	BH2	BH213	BH204	BH201
Date Sampled		20/09/2019	20/09/2019	20/09/2019	20/09/2019	24/09/2019
Type of sample		AIR CANISTER	AIR CANISTER	AIR CANISTER	AIR CANISTER	AIR CANISTER
Air Kit Security No.		3301	2260	2467	3515	3300
Date prepared	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Date analysed	-	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
Methane (CH_4)	%	<0.01	<0.01	<0.01	0.03	<0.01

Permanent Gas analysis		
Our Reference		226861-6
Your Reference	UNITS	BH208
Date Sampled		24/09/2019
Type of sample		AIR CANISTER
Air Kit Security No.		2242
Date prepared	-	25/09/2019
Date analysed	-	25/09/2019
Methane (CH_4)	%	<0.01

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: 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	-6	-6	0	[NT]	[NT]
Date prepared	-			24/09/2019	1	24/09/2019	24/09/2019		24/09/2019	[NT]
Date analysed	-			25/09/2019	1	25/09/2019	25/09/2019		25/09/2019	[NT]
Propylene	ppbv	0.5	TO15	<0.5	1	6.1	5.7	7	103	[NT]
Dichlorodifluoromethane	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Chloromethane	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
1,2-Dichlorotetrafluoroethane	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Vinyl chloride	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
1,3-Butadiene	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Bromomethane	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Chloroethane	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Ethanol	ppbv	5	TO15	<5	1	20	20	0	[NT]	[NT]
Acrolein	ppbv	5	TO15	<5	1	<10	<10	0	[NT]	[NT]
Trichlorofluoromethane (Freon 11)	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Acetone	ppbv	5	TO15	<5	1	40	40	0	[NT]	[NT]
Isopropyl Alcohol	ppbv	5	TO15	<5	1	53	52	2	[NT]	[NT]
1,1-Dichloroethene	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
1,1,2-Trichlorotrifluoroethane	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Methylene chloride (Dichloromethane)	ppbv	5	TO15	<5	1	62	62	0	[NT]	[NT]
Carbon Disulfide	ppbv	5	TO15	<5	1	<10	<10	0	[NT]	[NT]
trans-1,2-dichloroethene	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
MTBE	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
1,1- Dichloroethane	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Vinyl Acetate	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
MEK	ppbv	5	TO15	<5	1	<10	<10	0	[NT]	[NT]
Hexane	ppbv	0.5	TO15	<0.5	1	31	29	7	107	[NT]
cis-1,2-Dichloroethene	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Ethyl Acetate	ppbv	0.5	TO15	<0.5	1	5.0	5.0	0	[NT]	[NT]
Chloroform	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Tetrahydrofuran	ppbv	0.5	TO15	<0.5	1	17	16	6	[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	<1	<1	0	[NT]	[NT]
Benzene	ppbv	0.5	TO15	<0.5	1	150	150	0	101	[NT]
Carbon tetrachloride	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Cyclohexane	ppbv	0.5	TO15	<0.5	1	160	150	6	99	[NT]
Heptane	ppbv	0.5	TO15	<0.5	1	200	200	0	94	[NT]

QUALITY CONTROL: TO15 in Canisters/Bags						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Trichloroethene	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
1,2-Dichloropropane	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
1,4-Dioxane	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Bromodichloromethane	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Methyl Methacrylate	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
MIBK	ppbv	5	TO15	<5	1	<10	<10	0	[NT]	[NT]
cis-1,3-Dichloropropene	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
trans-1,3-Dichloropropene	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Toluene	ppbv	0.5	TO15	<0.5	1	1300	1200	8	101	[NT]
1,1,2-Trichloroethane	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Methyl Butyl Ketone	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Dibromochloromethane	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Tetrachloroethene	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
1,2-Dibromoethane	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Chlorobenzene	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Ethylbenzene	ppbv	0.5	TO15	<0.5	1	120	120	0	101	[NT]
m-& p-Xylene	ppbv	1	TO15	<1	1	280	270	4	110	[NT]
Styrene	ppbv	0.5	TO15	<0.5	1	<1	<1	0	87	[NT]
o-Xylene	ppbv	0.5	TO15	<0.5	1	80	78	3	102	[NT]
Bromoform	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
1,1,2,2-Tetrachloroethane	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
4-ethyl toluene	ppbv	0.5	TO15	<0.5	1	7.9	7.8	1	109	[NT]
1,3,5-Trimethylbenzene	ppbv	0.5	TO15	<0.5	1	7.5	7.6	1	104	[NT]
1,2,4-Trimethylbenzene	ppbv	0.5	TO15	<0.5	1	12	12	0	111	[NT]
1,3-Dichlorobenzene	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Benzyl chloride	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
1,4-Dichlorobenzene	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
1,2-Dichlorobenzene	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
1,2,4-Trichlorobenzene	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Naphthalene	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Hexachloro- 1,3-butadiene	ppbv	0.5	TO15	<0.5	1	<1	<1	0	[NT]	[NT]
Surrogate-Bromochloromethane	% rec		TO15	106	1	106	110	4	111	[NT]
Surrogate -1,4-Difluorobenzene	% rec		TO15	105	1	105	107	2	106	[NT]
Surrogate-Chlorobenzene-D5	% rec		TO15	104	1	108	111	3	106	[NT]

QUALITY CONTROL: TO15 in Canisters ug/m3						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Vacuum before Shipment	Hg"			[NT]	1	-30	-30	0	[NT]	[NT]
Vacuum before Analysis	Hg"			[NT]	1	-6	-6	0	[NT]	[NT]
Date prepared	-			24/09/2019	1	24/09/2019	24/09/2019		[NT]	[NT]
Date analysed	-			25/09/2019	1	25/09/2019	25/09/2019		[NT]	[NT]
Propylene	µg/m³	0.9	TO15	<0.9	1	10	9.7	3	[NT]	[NT]
Dichlorodifluoromethane	µg/m³	2.5	TO15	<2.5	1	<4.9	<4.9	0	[NT]	[NT]
Chloromethane	µg/m³	1.0	TO15	<1.0	1	<2.1	<2.1	0	[NT]	[NT]
1,2-Dichlorotetrafluoroethane	µg/m³	2.5	TO15	<2.5	1	<4.9	<4.9	0	[NT]	[NT]
Vinyl chloride	µg/m³	1.3	TO15	<1.3	1	<2.6	<2.6	0	[NT]	[NT]
1,3-Butadiene	µg/m³	1.1	TO15	<1.1	1	<2.2	<2.2	0	[NT]	[NT]
Bromomethane	µg/m³	1.9	TO15	<1.9	1	<3.8	<3.8	0	[NT]	[NT]
Chloroethane	µg/m³	1.3	TO15	<1.3	1	<2.6	<2.6	0	[NT]	[NT]
Ethanol	µg/m³	9	TO15	<9	1	40	50	22	[NT]	[NT]
Acrolein	µg/m³	11	TO15	<11	1	<23	<23	0	[NT]	[NT]
Trichlorofluoromethane (Freon 11)	µg/m³	2.8	TO15	<2.8	1	<5.6	<5.6	0	[NT]	[NT]
Acetone	µg/m³	11.9	TO15	<11.9	1	90	90	0	[NT]	[NT]
Isopropyl Alcohol	µg/m³	12	TO15	<12	1	130	130	0	[NT]	[NT]
1,1-Dichloroethene	µg/m³	2.0	TO15	<2.0	1	<4	<4	0	[NT]	[NT]
1,1,2-Trichlorotrifluoroethane	µg/m³	3.8	TO15	<3.8	1	<7.7	<7.7	0	[NT]	[NT]
Methylene chloride (Dichloromethane)	µg/m³	17	USEPA 18	<17	1	210	210	0	[NT]	[NT]
Carbon Disulfide	µg/m³	16	TO15	<16	1	<31	<31	0	[NT]	[NT]
trans-1,2-dichloroethene	µg/m³	2.0	TO15	<2.0	1	<4	<4	0	[NT]	[NT]
MTBE	µg/m³	1.8	TO15	<1.8	1	<3.6	<3.6	0	[NT]	[NT]
1,1- Dichloroethane	µg/m³	2.0	TO15	<2.0	1	<4	<4	0	[NT]	[NT]
Vinyl Acetate	µg/m³	1.8	TO15	<1.8	1	<3.5	<3.5	0	[NT]	[NT]
MEK	µg/m³	15	TO15	<15	1	<29	<29	0	[NT]	[NT]
Hexane	µg/m³	1.8	TO15	<1.8	1	110	100	10	[NT]	[NT]
cis-1,2-Dichloroethene	µg/m³	2.0	TO15	<2.0	1	<4	<4	0	[NT]	[NT]
Ethyl Acetate	µg/m³	1.8	TO15	<1.8	1	18	20	11	[NT]	[NT]
Chloroform	µg/m³	2.4	TO15	<2.4	1	<4.9	<4.9	0	[NT]	[NT]
Tetrahydrofuran	µg/m³	1.5	TO15	<1.5	1	51	46	10	[NT]	[NT]
1,1,1-Trichloroethane	µg/m³	2.7	TO15	<2.7	1	<5.5	<5.5	0	[NT]	[NT]
1,2-Dichloroethane	µg/m³	2.0	TO15	<2.0	1	<4	<4	0	[NT]	[NT]
Benzene	µg/m³	1.6	TO15	<1.6	1	470	460	2	[NT]	[NT]
Carbon tetrachloride	µg/m³	3.1	TO15	<3.1	1	<6.3	<6.3	0	[NT]	[NT]
Cyclohexane	µg/m³	1.7	TO15	<1.7	1	540	520	4	[NT]	[NT]
Heptane	µg/m³	2.0	TO15	<2.0	1	820	820	0	[NT]	[NT]

QUALITY CONTROL: TO15 in Canisters ug/m3						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Trichloroethene	µg/m³	2.7	TO15	<2.7	1	<5.4	<5.4	0	[NT]	[NT]
1,2-Dichloropropane	µg/m³	2.3	TO15	<2.3	1	<4.6	<4.6	0	[NT]	[NT]
1,4-Dioxane	µg/m³	1.8	TO15	<1.8	1	<3.6	<3.6	0	[NT]	[NT]
Bromodichloromethane	µg/m³	3.4	TO15	<3.4	1	<6.7	<6.7	0	[NT]	[NT]
Methyl Methacrylate	µg/m³	2.0	TO15	<2.0	1	<4.1	<4.1	0	[NT]	[NT]
MIBK	µg/m³	20	TO15	<20	1	<41	<41	0	[NT]	[NT]
cis-1,3-Dichloropropene	µg/m³	2.3	TO15	<2.3	1	<4.5	<4.5	0	[NT]	[NT]
trans-1,3-Dichloropropene	µg/m³	2.3	TO15	<2.3	1	<4.5	<4.5	0	[NT]	[NT]
Toluene	µg/m³	1.9	TO15	<1.9	1	4700	4700	0	[NT]	[NT]
1,1,2-Trichloroethane	µg/m³	2.7	TO15	<2.7	1	<5.5	<5.5	0	[NT]	[NT]
Methyl Butyl Ketone	µg/m³	2.0	TO15	<2.0	1	<4.1	<4.1	0	[NT]	[NT]
Dibromochloromethane	µg/m³	1.6	TO15	<1.6	1	<3.3	<3.3	0	[NT]	[NT]
Tetrachloroethene	µg/m³	3.4	TO15	<3.4	1	<6.8	<6.8	0	[NT]	[NT]
1,2-Dibromoethane	µg/m³	3.8	TO15	<3.8	1	<7.7	<7.7	0	[NT]	[NT]
Chlorobenzene	µg/m³	2.3	TO15	<2.3	1	<4.6	<4.6	0	[NT]	[NT]
Ethylbenzene	µg/m³	2.2	TO15	<2.2	1	530	520	2	[NT]	[NT]
m-& p-Xylene	µg/m³	4.3	TO15	<4.3	1	1200	1200	0	[NT]	[NT]
Styrene	µg/m³	2.1	TO15	<2.1	1	<4.3	<4.3	0	[NT]	[NT]
o-Xylene	µg/m³	2.2	TO15	<2.2	1	350	340	3	[NT]	[NT]
Bromoform	µg/m³	5.2	TO15	<5.2	1	<10	<10	0	[NT]	[NT]
1,1,2,2-Tetrachloroethane	µg/m³	3.4	TO15	<3.4	1	<6.9	<6.9	0	[NT]	[NT]
4-ethyl toluene	µg/m³	2.5	TO15	<2.5	1	39	38	3	[NT]	[NT]
1,3,5-Trimethylbenzene	µg/m³	2.5	TO15	<2.5	1	37	37	0	[NT]	[NT]
1,2,4-Trimethylbenzene	µg/m³	2.5	TO15	<2.5	1	58	58	0	[NT]	[NT]
1,3-Dichlorobenzene	µg/m³	3.0	TO15	<3.0	1	<6	<6	0	[NT]	[NT]
Benzyl chloride	µg/m³	2.6	TO15	<2.6	1	<5.2	<5.2	0	[NT]	[NT]
1,4-Dichlorobenzene	µg/m³	3.0	TO15	<3.0	1	<6	<6	0	[NT]	[NT]
1,2-Dichlorobenzene	µg/m³	3.0	TO15	<3.0	1	<6	<6	0	[NT]	[NT]
1,2,4-Trichlorobenzene	µg/m³	3.7	TO15	<3.7	1	<7.4	<7.4	0	[NT]	[NT]
Naphthalene	µg/m³	2.6	TO15	<2.6	1	<5.2	<5.2	0	[NT]	[NT]
Hexachloro- 1,3-butadiene	µg/m³	5.3	TO15	<5.3	1	<11	<11	0	[NT]	[NT]
Surrogate-Bromochloromethane	% rec		TO15	106	1	106	110	4	[NT]	[NT]
Surrogate -1,4-Difluorobenzene	% rec		TO15	105	1	105	107	2	[NT]	[NT]
Surrogate-Chlorobenzene-D5	% rec		TO15	104	1	108	111	3	[NT]	[NT]

QUALITY CONTROL: TPH Air/ Air Phase Hydrocarbon						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			24/09/2019	1	24/09/2019	24/09/2019		24/09/2019	[NT]
Date analysed	-			25/09/2019	1	25/09/2019	25/09/2019		25/09/2019	[NT]
TPH C_5 - C_8 Aliphatic	µg/m^3	200	AT-005	<200	1	39000	40000	3	89	[NT]
TPH C_9 - C_{12} Aliphatic	µg/m^3	50	AT-005	<50	1	880	840	5	[NT]	[NT]
TPH C_9 - C_{10} Aromatic	µg/m^3	100	AT-005	<100	1	<200	<200	0	92	[NT]
TPH C_6 - C_{10} - BTEX (F1)	µg/m^3	200	TO15	<200	1	43000	42000	2	94	[NT]
TPH >C_{10} - C_{12} - Naphthalene (F2)	µg/m^3	40	TO15	<40	1	620	610	2	95	[NT]

QUALITY CONTROL: Permanent Gas analysis						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			25/09/2019	3	25/09/2019	25/09/2019		25/09/2019	[NT]
Date analysed	-			25/09/2019	3	25/09/2019	25/09/2019		25/09/2019	[NT]
Methane (CH_4)	%	0.01	AT-003	<0.01	3	<0.01	<0.01	0	100	[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.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Report Comments

AIR_TO15/AIR_TO15_UG/TPH_A_ALI_ARO:

PQL has been raised due to the high level of analytes present in the sample/s (1-3).

PQL for vinyl chloride in sample #4 has been raised due to interference from analytes (other than those being tested) in the sample/s.

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	84822.02	**Suburb:**	Eastern Creek	**To:**	Lab name
Project Name:	Green Waratah	**Order Number**			
Project Manager:	JS	**Sampler:**	JS	**Attn:**	
Emails:	el.james-hall;jack.snowden@douglaspartners.com.	paul.gorman@douglaspartners.com.au		**Phone:**	
Date Required:	24 hr TAT			**Email:**	
Prior Storage:	☐ Eski	Do samples contain 'potential' HBM?	Yes ☐	No ☐	(If YES, then handle, transport and store in accordance with FPM HAZID)

Sample ID	Lab ID	Date Sampled	Sample Type (G-Gas W - water)	Container Type (G - glass M- Metal)	Analytes: VOC	TRH	BTEX	Methane						Notes/preservation
BH4	1	20/09/19	G 3301	M	x	x	x	x						
BH2	2	20/09/19	G 3260	M	x	x	x	x						
BH213	3	20/09/19	G 3267	M	x	x	x	x						
BH204	4	20/09/19	G 3315	M	x	x	x	x						
BH201	5	24/09/19	G 3300	M	x	x	x	x						
BH208	6	24/09/19	G 3242	M	x	x	x	x						
PQL (S) mg/kg													**ANZECC PQLs req'd for all water analytes** ☐	

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Lab Report/Reference No:

Total number of samples in container: **Relinquished by:** **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd **Address** **Phone:** **Fax:**

Signed: JS **Received by:** **Date & Time:**

ENVIROLAB

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 226561
Date Received: 24/9/19
Time Received: 17:45
Received by: DF
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

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	Douglas Partners Pty Ltd
Attention	Paul Gorman, Joel Hall, Jack Snowden

Sample Login Details

Your reference	Green Waratah 84822.02
Envirolab Reference	226861
Date Sample Received	24/09/2019
Date Instructions Received	24/09/2019
Date Results Expected to be Reported	26/09/2019

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	6x air canister
Turnaround Time Requested	1 day
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	TO15 in Canisters/Bags	TO15 in Canisters ug/m3	TPH Air/ Air Phase Hydrocarbon	Permanent Gas analysis
BH4	✓	✓	✓	✓
BH2	✓	✓	✓	✓
BH213	✓	✓	✓	✓
BH204	✓	✓	✓	✓
BH201	✓	✓	✓	✓
BH208	✓	✓	✓	✓

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.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 127324

Client:
Douglas Partners Pty Ltd
96 Hermitage Rd
West Ryde
NSW 2114

Attention: Veronica Ku, Paul Gorman

Sample log in details:

Your Reference:	**84822, Due Diligence Investigation**		
No. of samples:	21 soils		
Date samples received / completed instructions received	01/05/15	/	01/05/15

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: / Issue Date:	8/05/15	/	8/05/15
Date of Preliminary Report:	Not Issued		

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	127324-6	127324-18	127324-19	127324-20	127324-21
Your Reference	----------	S6	BD1/300415	BD2/300415	TS/300415	TB/300415
Depth	----------	0-0.15	-	-	-	-
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	06/05/2015	05/05/2015	05/05/2015	05/05/2015	05/05/2015
Date analysed	-	06/05/2015	06/05/2015	06/05/2015	06/05/2015	06/05/2015
TRHC$_6$ - C$_9$	mg/kg	<25	<25	<25	[NA]	[NA]
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25	<25	[NA]	[NA]
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	<25	<25	[NA]	[NA]
Benzene	mg/kg	<0.2	<0.2	<0.2	95%	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	95%	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	95%	<1
m+p-xylene	mg/kg	<2	<2	<2	96%	<2
o-Xylene	mg/kg	<1	<1	<1	95%	<1
naphthalene	mg/kg	<1	<1	<1	[NA]	[NA]
Surrogate aaa-Trifluorotoluene	%	96	99	108	107	90

svTRH (C10-C40) in Soil				
Our Reference:	UNITS	127324-6	127324-18	127324-19
Your Reference	----------	S6	BD1/300415	BD2/300415
Depth	----------	0-0.15	-	-
Type of sample		Soil	Soil	Soil
Date extracted	-	05/05/2015	05/05/2015	05/05/2015
Date analysed	-	06/05/2015	06/05/2015	06/05/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	660	<100	580
TRHC$_{29}$ - C$_{36}$	mg/kg	890	220	890
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	1,300	210	1,200
TRH>C$_{34}$-C$_{40}$	mg/kg	760	<100	830
Surrogate o-Terphenyl	%	91	70	96

PAHs in Soil		
Our Reference:	UNITS	127324-6
Your Reference	----------	S6
Depth	----------	0-0.15
Type of sample		Soil
Date extracted	-	05/05/2015
Date analysed	-	05/05/2015
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	0.5
Benzo(a)anthracene	mg/kg	0.2
Chrysene	mg/kg	0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.4
Benzo(a)pyrene	mg/kg	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	0.3
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	0.5
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
Total Positive PAHs	mg/kg	2.7
Surrogate p-Terphenyl-d14	%	115

Organochlorine Pesticides in soil						
Our Reference:	UNITS	127324-1	127324-2	127324-3	127324-4	127324-5
Your Reference	----------	S1	S2	S3	S4	S5
Depth	----------	0-0.15	0-0.15	0-0.15	0-0.15	0-0.15
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/05/2015	05/05/2015	05/05/2015	05/05/2015	05/05/2015
Date analysed	-	06/05/2015	06/05/2015	06/05/2015	06/05/2015	06/05/2015
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.3	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	92	90	103	86	83

Organochlorine Pesticides in soil						
Our Reference:	UNITS	127324-6	127324-7	127324-8	127324-9	127324-10
Your Reference	----------	S6	S7	S8	S9	S10
Depth	----------	0-0.15	0-0.15	0-0.15	0-0.15	0-0.15
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/05/2015	05/05/2015	05/05/2015	05/05/2015	05/05/2015
Date analysed	-	06/05/2015	06/05/2015	06/05/2015	06/05/2015	06/05/2015
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.7	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	88	82	83	84	69

Organochlorine Pesticides in soil						
Our Reference:	UNITS	127324-11	127324-12	127324-13	127324-14	127324-15
Your Reference	----------	S11	S12	S13	S14	S15
Depth	----------	0-0.15	0-0.15	0-0.15	0-0.15	0-0.15
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/05/2015	05/05/2015	05/05/2015	05/05/2015	05/05/2015
Date analysed	-	06/05/2015	06/05/2015	06/05/2015	06/05/2015	06/05/2015
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	92	88	90	88	90

Organochlorine Pesticides in soil			
Our Reference:	UNITS	127324-16	127324-17
Your Reference	----------	S16	S17
Depth	----------	0-0.15	0-0.15
Type of sample		Soil	Soil
Date extracted	-	05/05/2015	05/05/2015
Date analysed	-	06/05/2015	06/05/2015
HCB	mg/kg	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Surrogate TCMX	%	91	85

PCBs in Soil						
Our Reference:	UNITS	127324-1	127324-2	127324-3	127324-4	127324-5
Your Reference	----------	S1	S2	S3	S4	S5
Depth	----------	0-0.15	0-0.15	0-0.15	0-0.15	0-0.15
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/05/2015	05/05/2015	05/05/2015	05/05/2015	05/05/2015
Date analysed	-	06/05/2015	06/05/2015	06/05/2015	06/05/2015	06/05/2015
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	92	90	103	86	83

PCBs in Soil						
Our Reference:	UNITS	127324-6	127324-7	127324-8	127324-9	127324-10
Your Reference	----------	S6	S7	S8	S9	S10
Depth	----------	0-0.15	0-0.15	0-0.15	0-0.15	0-0.15
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/05/2015	05/05/2015	05/05/2015	05/05/2015	05/05/2015
Date analysed	-	06/05/2015	06/05/2015	06/05/2015	06/05/2015	06/05/2015
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	88	82	83	84	69

PCBs in Soil						
Our Reference:	UNITS	127324-11	127324-12	127324-13	127324-14	127324-15
Your Reference	----------	S11	S12	S13	S14	S15
Depth	----------	0-0.15	0-0.15	0-0.15	0-0.15	0-0.15
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/05/2015	05/05/2015	05/05/2015	05/05/2015	05/05/2015
Date analysed	-	06/05/2015	06/05/2015	06/05/2015	06/05/2015	06/05/2015
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	92	88	90	88	90

PCBs in Soil			
Our Reference:	UNITS	127324-16	127324-17
Your Reference	----------	S16	S17
Depth	----------	0-0.15	0-0.15
Type of sample		Soil	Soil
Date extracted	-	05/05/2015	05/05/2015
Date analysed	-	06/05/2015	06/05/2015
Aroclor 1016	mg/kg	<0.1	<0.1
Aroclor 1221	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
Surrogate TCLMX	%	91	85

Acid Extractable metals in soil						
Our Reference:	UNITS	127324-1	127324-2	127324-3	127324-4	127324-5
Your Reference	----------	S1	S2	S3	S4	S5
Depth	----------	0-0.15	0-0.15	0-0.15	0-0.15	0-0.15
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	05/05/2015	05/05/2015	05/05/2015	05/05/2015	05/05/2015
Date analysed	-	05/05/2015	05/05/2015	05/05/2015	05/05/2015	05/05/2015
Arsenic	mg/kg	6	12	4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	3
Chromium	mg/kg	16	15	7	7	38
Copper	mg/kg	16	27	61	44	120
Lead	mg/kg	56	13	12	13	200
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Nickel	mg/kg	7	7	19	16	24
Zinc	mg/kg	320	28	360	140	6,200

Acid Extractable metals in soil						
Our Reference:	UNITS	127324-6	127324-7	127324-8	127324-9	127324-10
Your Reference	----------	S6	S7	S8	S9	S10
Depth	----------	0-0.15	0-0.15	0-0.15	0-0.15	0-0.15
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	05/05/2015	05/05/2015	05/05/2015	05/05/2015	05/05/2015
Date analysed	-	05/05/2015	05/05/2015	05/05/2015	05/05/2015	05/05/2015
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	0.5	0.5	<0.4	<0.4	0.7
Chromium	mg/kg	27	32	12	16	31
Copper	mg/kg	110	60	34	61	89
Lead	mg/kg	62	69	15	25	42
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	35	57	15	52	49
Zinc	mg/kg	520	400	170	230	480

Acid Extractable metals in soil						
Our Reference:	UNITS	127324-11	127324-12	127324-13	127324-14	127324-15
Your Reference	----------	S11	S12	S13	S14	S15
Depth	----------	0-0.15	0-0.15	0-0.15	0-0.15	0-0.15
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	05/05/2015	05/05/2015	05/05/2015	05/05/2015	05/05/2015
Date analysed	-	05/05/2015	05/05/2015	05/05/2015	05/05/2015	05/05/2015
Arsenic	mg/kg	<4	<4	7	<4	7
Cadmium	mg/kg	0.5	<0.4	0.5	<0.4	0.6
Chromium	mg/kg	26	7	20	21	23
Copper	mg/kg	74	71	12	58	57
Lead	mg/kg	200	3,700	95	14	110
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	65	11	6	27	17
Zinc	mg/kg	750	32	66	37	250

Acid Extractable metals in soil					
Our Reference:	UNITS	127324-16	127324-17	127324-18	127324-19
Your Reference	----------	S16	S17	BD1/300415	BD2/300415
Depth	----------	0-0.15	0-0.15	-	-
Type of sample		Soil	Soil	Soil	Soil
Date digested	-	05/05/2015	05/05/2015	05/05/2015	05/05/2015
Date analysed	-	05/05/2015	05/05/2015	05/05/2015	05/05/2015
Arsenic	mg/kg	<4	6	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	0.4
Chromium	mg/kg	<1	23	6	27
Copper	mg/kg	41	65	49	89
Lead	mg/kg	<1	34	9	51
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	23	18	31
Zinc	mg/kg	260	240	460	430

Misc Inorg - Soil				
Our Reference:	UNITS	127324-1	127324-11	127324-17
Your Reference	----------	S1	S11	S17
Depth	----------	0-0.15	0-0.15	0-0.15
Type of sample		Soil	Soil	Soil
Date prepared	-	7/05/2015	7/05/2015	7/05/2015
Date analysed	-	7/05/2015	7/05/2015	7/05/2015
pH 1:5 soil:water	pH Units	6.1	8.0	7.1

CEC Our Reference: Your Reference Depth Type of sample	UNITS ---------- ----------	127324-1 S1 0-0.15 Soil	127324-11 S11 0-0.15 Soil	127324-17 S17 0-0.15 Soil
Date extracted	-	06/05/2015	06/05/2015	06/05/2015
Date analysed	-	06/05/2015	06/05/2015	06/05/2015
Exchangeable Ca	meq/100g	7.2	17	24
Exchangeable K	meq/100g	0.1	0.3	1.1
Exchangeable Mg	meq/100g	2.3	3.5	5.5
Exchangeable Na	meq/100g	<0.1	0.14	0.28
Cation Exchange Capacity	meq/100g	9.8	21	31

Moisture						
Our Reference:	UNITS	127324-1	127324-2	127324-3	127324-4	127324-5
Your Reference	----------	S1	S2	S3	S4	S5
Depth	----------	0-0.15	0-0.15	0-0.15	0-0.15	0-0.15
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	5/05/2015	5/05/2015	5/05/2015	5/05/2015	5/05/2015
Date analysed	-	6/05/2015	6/05/2015	6/05/2015	6/05/2015	6/05/2015
Moisture	%	28	22	22	20	46

Moisture						
Our Reference:	UNITS	127324-6	127324-7	127324-8	127324-9	127324-10
Your Reference	----------	S6	S7	S8	S9	S10
Depth	----------	0-0.15	0-0.15	0-0.15	0-0.15	0-0.15
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	5/05/2015	5/05/2015	5/05/2015	5/05/2015	5/05/2015
Date analysed	-	6/05/2015	6/05/2015	6/05/2015	6/05/2015	6/05/2015
Moisture	%	7.1	8.3	37	24	18

Moisture						
Our Reference:	UNITS	127324-11	127324-12	127324-13	127324-14	127324-15
Your Reference	----------	S11	S12	S13	S14	S15
Depth	----------	0-0.15	0-0.15	0-0.15	0-0.15	0-0.15
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	5/05/2015	5/05/2015	5/05/2015	5/05/2015	5/05/2015
Date analysed	-	6/05/2015	6/05/2015	6/05/2015	6/05/2015	6/05/2015
Moisture	%	19	6.2	14	7.9	40

Moisture					
Our Reference:	UNITS	127324-16	127324-17	127324-18	127324-19
Your Reference	----------	S16	S17	BD1/300415	BD2/300415
Depth	----------	0-0.15	0-0.15	-	-
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	5/05/2015	5/05/2015	5/05/2015	5/05/2015
Date analysed	-	6/05/2015	6/05/2015	6/05/2015	6/05/2015
Moisture	%	35	41	29	7.9

Asbestos ID - soils						
Our Reference:	UNITS	127324-1	127324-2	127324-3	127324-4	127324-5
Your Reference	----------	S1	S2	S3	S4	S5
Depth	----------	0-0.15	0-0.15	0-0.15	0-0.15	0-0.15
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	7/05/2015	7/05/2015	7/05/2015	7/05/2015	7/05/2015
Sample mass tested	g	Approx. 30g	Approx. 35g	Approx. 35g	Approx. 35g	25.86g
Sample Description	-	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference:	UNITS	127324-6	127324-7	127324-8	127324-9	127324-15
Your Reference	----------	S6	S7	S8	S9	S15
Depth	----------	0-0.15	0-0.15	0-0.15	0-0.15	0-0.15
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	7/05/2015	7/05/2015	7/05/2015	7/05/2015	7/05/2015
Sample mass tested	g	Approx. 40g	Approx. 35g	Approx. 25g	Approx. 35g	Approx. 25g
Sample Description	-	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils			
Our Reference:	UNITS	127324-16	127324-17
Your Reference	----------	S16	S17
Depth	----------	0-0.15	0-0.15
Type of sample		Soil	Soil
Date analysed	-	7/05/2015	7/05/2015
Sample mass tested	g	Approx. 20g	Approx. 25g
Sample Description	-	Brown coarse grain soil & rocks	Brown coarse grain soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected

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.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-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-012 subset	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. 'TEQ 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. 'TEQ 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. 'TEQ 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-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.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Metals-009	Determination of exchangeable cations and cation exchange capacity in soil based on Rayment and Lyons 2011.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
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.

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			05/05/2015	[NT]	[NT]	LCS-8	05/05/2015
Date analysed	-			06/05/2015	[NT]	[NT]	LCS-8	06/05/2015
TRHC6 - C9	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-8	121%
TRHC6 - C10	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-8	121%
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	LCS-8	123%
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	LCS-8	120%
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-8	120%
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	LCS-8	120%
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-8	116%
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	112	[NT]	[NT]	LCS-8	112%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			05/05/2015	[NT]	[NT]	LCS-8	05/05/2015
Date analysed	-			06/05/2015	[NT]	[NT]	LCS-8	06/05/2015
TRHC10 - C14	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-8	90%
TRHC15 - C28	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-8	99%
TRHC29 - C36	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-8	92%
TRH>C10-C16	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-8	90%
TRH>C16-C34	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-8	99%
TRH>C34-C40	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-8	92%
Surrogate o-Terphenyl	%		Org-003	78	[NT]	[NT]	LCS-8	86%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			05/05/2015	127324-6	05/05/2015 || 06/05/2015	LCS-8	05/05/2015
Date analysed	-			05/05/2015	127324-6	05/05/2015 || 07/05/2015	LCS-8	05/05/2015
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	127324-6	<0.1 || <0.1	LCS-8	103%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	127324-6	0.1 || 0.3 || RPD: 100	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	127324-6	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	127324-6	<0.1 || <0.1	LCS-8	94%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	127324-6	0.2 || 3.0 || RPD: 175	LCS-8	100%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	127324-6	<0.1 || 0.4	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	127324-6	0.3 || 3.7 || RPD: 170	LCS-8	97%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	127324-6	0.5 || 6.5 || RPD: 171	LCS-8	102%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	127324-6	0.2 || 2.1 || RPD: 165	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	127324-6	0.1 || 2.5 || RPD: 185	LCS-8	93%
Benzo(b,j+k) fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	127324-6	0.4 || 3.3 || RPD: 157	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	127324-6	0.2 || 2.7 || RPD: 172	LCS-8	122%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	127324-6	0.3 || 2.1 || RPD: 150	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	127324-6	<0.1 || 0.3	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	127324-6	0.5 || 2.9 || RPD: 141	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	107	127324-6	115 || 108 || RPD: 6	LCS-8	98%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			05/05/2015	127324-1	05/05/2015 || 05/05/2015	LCS-7	05/05/2015
Date analysed	-			06/05/2015	127324-1	06/05/2015 || 06/05/2015	LCS-7	06/05/2015
HCB	mg/kg	0.1	Org-005	<0.1	127324-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	127324-1	<0.1 || <0.1	LCS-7	96%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	127324-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	127324-1	<0.1 || <0.1	LCS-7	86%
Heptachlor	mg/kg	0.1	Org-005	<0.1	127324-1	<0.1 || <0.1	LCS-7	85%
delta-BHC	mg/kg	0.1	Org-005	<0.1	127324-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	127324-1	<0.1 || <0.1	LCS-7	95%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	127324-1	<0.1 || <0.1	LCS-7	98%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	127324-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	127324-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	127324-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	127324-1	<0.1 || <0.1	LCS-7	93%
Dieldrin	mg/kg	0.1	Org-005	<0.1	127324-1	0.3 || 0.5 || RPD: 50	LCS-7	99%
Endrin	mg/kg	0.1	Org-005	<0.1	127324-1	<0.1 || <0.1	LCS-7	95%
pp-DDD	mg/kg	0.1	Org-005	<0.1	127324-1	<0.1 || <0.1	LCS-7	96%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	127324-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	127324-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	127324-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	127324-1	<0.1 || <0.1	LCS-7	101%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	127324-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-005	102	127324-1	92 || 96 || RPD: 4	LCS-7	86%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			05/05/2015	127324-1	05/05/2015 || 05/05/2015	LCS-7	05/05/2015
Date analysed	-			06/05/2015	127324-1	06/05/2015 || 06/05/2015	LCS-7	06/05/2015
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	127324-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	127324-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	127324-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	127324-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	127324-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	127324-1	<0.1 || <0.1	LCS-7	106%
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	127324-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	102	127324-1	92 || 96 || RPD: 4	LCS-7	90%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date digested	-			05/05/2015	127324-1	05/05/2015 || 05/05/2015	LCS-7	05/05/2015
Date analysed	-			05/05/2015	127324-1	05/05/2015 || 05/05/2015	LCS-7	05/05/2015
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	127324-1	6 || 7 || RPD: 15	LCS-7	107%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	127324-1	<0.4 || <0.4	LCS-7	101%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	127324-1	16 || 17 || RPD: 6	LCS-7	104%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	127324-1	16 || 19 || RPD: 17	LCS-7	107%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	127324-1	56 || 57 || RPD: 2	LCS-7	98%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	127324-1	<0.1 || <0.1	LCS-7	104%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	127324-1	7 || 8 || RPD: 13	LCS-7	101%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	127324-1	320 || 340 || RPD: 6	LCS-7	100%

QUALITY CONTROL Misc Inorg - Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			7/05/2015	[NT]	[NT]	LCS-1	7/05/2015
Date analysed	-			7/05/2015	[NT]	[NT]	LCS-1	7/05/2015
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	[NT]	[NT]	LCS-1	102%
QUALITY CONTROL CEC	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			06/05/2015	127324-1	06/05/2015 || 06/05/2015	LCS-1	06/05/2015
Date analysed	-			06/05/2015	127324-1	06/05/2015 || 06/05/2015	LCS-1	06/05/2015
Exchangeable Ca	meq/100g	0.1	Metals-009	<0.1	127324-1	7.2 || 7.0 || RPD: 3	LCS-1	101%
Exchangeable K	meq/100g	0.1	Metals-009	<0.1	127324-1	0.1 || 0.1 || RPD: 0	LCS-1	110%
Exchangeable Mg	meq/100g	0.1	Metals-009	<0.1	127324-1	2.3 || 2.3 || RPD: 0	LCS-1	100%
Exchangeable Na	meq/100g	0.1	Metals-009	<0.1	127324-1	<0.1 || <0.1	LCS-1	106%
Cation Exchange Capacity	meq/100g	1	Metals-009	<1.0	127324-1	9.8 || 9.6 || RPD: 2	[NR]	[NR]

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	127324-11	05/05/2015 || 05/05/2015	127324-2	05/05/2015
Date analysed	-	127324-11	06/05/2015 || 06/05/2015	127324-2	06/05/2015
HCB	mg/kg	127324-11	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	127324-11	<0.1 || <0.1	127324-2	105%
gamma-BHC	mg/kg	127324-11	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	127324-11	<0.1 || <0.1	127324-2	94%
Heptachlor	mg/kg	127324-11	<0.1 || <0.1	127324-2	85%
delta-BHC	mg/kg	127324-11	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	127324-11	<0.1 || <0.1	127324-2	101%
Heptachlor Epoxide	mg/kg	127324-11	<0.1 || <0.1	127324-2	104%
gamma-Chlordane	mg/kg	127324-11	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	127324-11	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	127324-11	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	127324-11	<0.1 || <0.1	127324-2	99%
Dieldrin	mg/kg	127324-11	<0.1 || <0.1	127324-2	104%
Endrin	mg/kg	127324-11	<0.1 || <0.1	127324-2	96%
pp-DDD	mg/kg	127324-11	<0.1 || <0.1	127324-2	104%
Endosulfan II	mg/kg	127324-11	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	127324-11	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	127324-11	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	127324-11	<0.1 || <0.1	127324-2	104%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Methoxychlor	mg/kg	127324-11	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%	127324-11	92 || 85 || RPD: 8	127324-2	95%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	127324-11	05/05/2015 || 05/05/2015	127324-2	05/05/2015
Date analysed	-	127324-11	06/05/2015 || 06/05/2015	127324-2	06/05/2015
Aroclor 1016	mg/kg	127324-11	<0.1 || <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	127324-11	<0.1 || <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	127324-11	<0.1 || <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	127324-11	<0.1 || <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	127324-11	<0.1 || <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	127324-11	<0.1 || <0.1	127324-2	107%
Aroclor 1260	mg/kg	127324-11	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	127324-11	92 || 85 || RPD: 8	127324-2	91%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	127324-11	05/05/2015 || 05/05/2015	127324-2	05/05/2015
Date analysed	-	127324-11	05/05/2015 || 05/05/2015	127324-2	05/05/2015
Arsenic	mg/kg	127324-11	<4 || <4	127324-2	86%
Cadmium	mg/kg	127324-11	0.5 || 0.5 || RPD: 0	127324-2	87%
Chromium	mg/kg	127324-11	26 || 20 || RPD: 26	127324-2	90%
Copper	mg/kg	127324-11	74 || 68 || RPD: 8	127324-2	92%
Lead	mg/kg	127324-11	200 || 320 || RPD: 46	127324-2	90%
Mercury	mg/kg	127324-11	<0.1 || <0.1	127324-2	107%
Nickel	mg/kg	127324-11	65 || 63 || RPD: 3	127324-2	84%
Zinc	mg/kg	127324-11	750 || 720 || RPD: 4	127324-2	88%

Report Comments:

PAH in soil: The RPD for duplicate results is accepted due to the non homogenous nature of the sample/s.

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.

Sample 127324-5; Loose fibre bundles of Chrysotile asbestos identified within the sample (total weight 0.0005g). Which in 25.86g of soil is 0.02g/kg (i.e. < reporting limit for the method of 0.1g/kg).

Asbestos ID was analysed by Approved Identifier:	Paul Ching
Asbestos ID was authorised by Approved Signatory:	Paul Ching

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

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.

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: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
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.

CHAIN OF CUSTODY

Douglas Partners
Geotechnics | Environment | Groundwater

Client: Douglas Partners	**Project Number** 84822	**To:**	Envirolab Services
Contact Person: Veronica Ku	**Project Name:** Due Diligence Investigation	**Contact Person:**	Aileen Hie
Project Mgr: P. Gorman	**PO No.:**	**Address:**	12 Ashley Street
Sampler: V.K	**lab Quote No.:**		Chatswood NSW 2068
Address: 96 Hermitage Road	**Date results required:** standard	**Phone:**	02 9910 6200
West Ryde NSW 2114	**Or choose:** standard / same day / 1 day / 2 day / 3 day	**Fax:**	02 9910 6201
	Note: Inform lab in advance if urgent turnaround is required - surcharges apply	**Email:**	ahie@envirolab.com.au
Phone: 9809 0666 Mob: 0457 820 847	**Report format:** esdat / PDF / Excel	**Laboratory Report No:**	
Email: veronica.ku @douglaspartners.com.au	**Comments**	**Lab Comments:**	

Sample Information				Tests Required										Comments
Lab Sample ID	Field Sample ID	Container Type	Type of sample	17 metals suite: As, Cd, Cr, Cu, Co, Pb, Hg, Mo, Ni, Sn, Se, Zn, Mn, Sb, Be, Ba, B	VOC	8 metals	OCP/PCB	pH, CEC	TRH	BTEX	PAH	Asbestos		Provide as much information about the sample as you can
1	S1/0-0.15	glass	Soil			x	x	x				x		
2	S2/0-0.15	glass	Soil			x	x					x		
3	S3/0-0.15	glass	Soil			x	x					x		
4	S4/0-0.15	glass	Soil			x	x					x		
5	S5/0-0.15	glass	Soil			x	x					x		
6	S6/0-0.15	glass	Soil			x	x		x	x	x	x		Combo 3a
7	S7/0-0.15	glass	Soil			x	x					x		
8	S8/0-0.15	glass	Soil			x	x					x		
9	S9/0-0.15	glass	Soil			x	x					x		
10	S10/0-0.15	glass	Soil			x	x							
11	S11/0-0.15	glass	Soil			x	x	x						
12	S12/0-0.15	glass	Soil			x	x							
13	S13/0-0.15	glass	Soil			x	x							
14	S14/0-0.15	glass	Soil			x	x							
15	S15/0-0.15	glass	Soil			x	x					x		
16	S16/0-0.15	glass	Soil			x	x					x		
17	S17/0-0.15	glass	Soil			x	x	x				x		
- NR	B1	plastic	plastic	x	x									
18	BD1/300415	glass	Soil			x			x	x				Combo 1m
19	BD2/300415	glass	Soil			x			x	x				Combo 1m
20	TS/300415	glass	Soil							x				
21	TB/300415	glass	Soil							x				

Relinquished by: Douglas Partners	**Sample Receipt**	*Lab use only:*
Hand delivered / Courier (by whom)	**Received by (Company):** ES	**Samples Received:** Cool or Ambient (circle one)
Condition of Sample at dispatch Cool or Ambient (circle)	**Print Name:** P. Raj	**Temperature Received at:** (if applicable)
Temperature (if Applicable):	**Date & Time:** 1/5/15 18:00	**Transported by:** Hand delivered / courier
Print Name:	**Signature:**	
Date & Time:		
Signature:		Page ___ of ___

ENVIROLAB GROUP

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 127324
Date Received: 01/5/2015
Time Received: 18:00
Received by: PL
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

12.2

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 127324-A

Client:
Douglas Partners Pty Ltd
96 Hermitage Rd
West Ryde
NSW 2114

Attention: Veronica Ku, Paul Gorman

Sample log in details:

Your Reference:	**84822, Due Diligence Investigation**
No. of samples:	1 Material
Date samples received:	01/05/15
Date completed instructions received:	05/05/15

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:	11/05/15
Date of Preliminary Report:	Not Issued
Issue Date:	11/05/15

This document shall not be reproduced except in full.

Results Approved By:

Jacinta Hurst
Laboratory Manager

VOCs in soil		
Our Reference:	UNITS	127324-A-22
Your Reference	----------	B1
Depth	----------	-
Type of sample		Plastic Scrap
Date extracted	-	07/05/2015
Date analysed	-	08/05/2015
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
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

VOCs in soil Our Reference: Your Reference Depth Type of sample	UNITS ---------- ---------- 	 127324-A-22 B1 - Plastic Scrap
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	%	118
Surrogate aaa-Trifluorotoluene	%	95
Surrogate Toluene-d_8	%	93
Surrogate 4-Bromofluorobenzene	%	102

Acid Extractable metals in soil			
Our Reference:	UNITS	127324-A-22	127324-A-23
Your Reference	----------	B1	B1 - TRIPLICATE
Depth	----------	-	-
Type of sample		Plastic Scrap	Material
Date digested	-	07/05/2015	07/05/2015
Date analysed	-	07/05/2015	07/05/2015
Arsenic	mg/kg	28	64
Cadmium	mg/kg	1	3
Chromium	mg/kg	2	2
Copper	mg/kg	8	10
Cobalt	mg/kg	2	<1
Lead	mg/kg	51,000	85,000
Mercury	mg/kg	0.3	0.7
Molybdenum	mg/kg	<1	<1
Nickel	mg/kg	2	3
Tin	mg/kg	93	62
Selenium	mg/kg	10	81
Zinc	mg/kg	890	13
Manganese	mg/kg	1	<1
Antimony	mg/kg	1,000	260
Beryllium	mg/kg	<1	<1
Barium	mg/kg	62	100
Boron	mg/kg	220	31

Moisture		
Our Reference:	UNITS	127324-A-22
Your Reference	----------	B1
Depth	----------	-
Type of sample		Plastic Scrap
Date prepared	-	7/05/2015
Date analysed	-	8/05/2015
Moisture	%	42

Method ID	Methodology Summary
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.

QUALITY CONTROL VOCs in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			07/05/2015	127324-A-22	07/05/2015 || 07/05/2015	LCS-4	07/05/2015
Date analysed	-			08/05/2015	127324-A-22	08/05/2015 || 08/05/2015	LCS-4	08/05/2015
Dichlorodifluoromethane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
Chloromethane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
Vinyl Chloride	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
Bromomethane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
Chloroethane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
Trichlorofluoromethane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
1,1-Dichloroethene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
trans-1,2-dichloroethene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
1,1-dichloroethane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	LCS-4	111%
cis-1,2-dichloroethene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
bromochloromethane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
chloroform	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	LCS-4	108%
2,2-dichloropropane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
1,2-dichloroethane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	LCS-4	91%
1,1,1-trichloroethane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	LCS-4	109%
1,1-dichloropropene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
Cyclohexane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
carbon tetrachloride	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
Benzene	mg/kg	0.2	Org-014	<0.2	127324-A-22	<0.2 || <0.2	[NR]	[NR]
dibromomethane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
1,2-dichloropropane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
trichloroethene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	LCS-4	121%
bromodichloromethane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	LCS-4	123%
trans-1,3-dichloropropene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
cis-1,3-dichloropropene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
1,1,2-trichloroethane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
Toluene	mg/kg	0.5	Org-014	<0.5	127324-A-22	<0.5 || <0.5	[NR]	[NR]
1,3-dichloropropane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
dibromochloromethane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	LCS-4	116%
1,2-dibromoethane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
tetrachloroethene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	LCS-4	117%
1,1,1,2-tetrachloroethane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
chlorobenzene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
Ethylbenzene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
bromoform	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
m+p-xylene	mg/kg	2	Org-014	<2	127324-A-22	<2 || <2	[NR]	[NR]
styrene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
o-Xylene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
1,2,3-trichloropropane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]

QUALITY CONTROL VOCs in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
isopropylbenzene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
bromobenzene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
n-propyl benzene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
2-chlorotoluene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
4-chlorotoluene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
1,3,5-trimethyl benzene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
tert-butyl benzene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
1,2,4-trimethyl benzene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
1,3-dichlorobenzene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
sec-butyl benzene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
1,4-dichlorobenzene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
4-isopropyl toluene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
1,2-dichlorobenzene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
n-butyl benzene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
1,2-dibromo-3-chloropropane	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
1,2,4-trichlorobenzene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
hexachlorobutadiene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
1,2,3-trichlorobenzene	mg/kg	1	Org-014	<1	127324-A-22	<1 || <1	[NR]	[NR]
Surrogate Dibromofluorometha	%		Org-014	106	127324-A-22	118 || 103 || RPD: 14	LCS-4	103%
Surrogate aaa-Trifluorotoluene	%		Org-014	89	127324-A-22	95 || 103 || RPD: 8	LCS-4	120%
Surrogate Toluene-d_8	%		Org-014	83	127324-A-22	93 || 107 || RPD: 14	LCS-4	107%
Surrogate 4-Bromofluorobenzene	%		Org-014	102	127324-A-22	102 || 102 || RPD: 0	LCS-4	90%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date digested	-			07/05/2015	127324-A-22	07/05/2015 || 07/05/2015	LCS-6	07/05/2015
Date analysed	-			07/05/2015	127324-A-22	07/05/2015 || 07/05/2015	LCS-6	07/05/2015
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	127324-A-22	28 || 28 || RPD: 0	LCS-6	98%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	127324-A-22	1 || 2 || RPD: 67	LCS-6	89%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	127324-A-22	2 || 1 || RPD: 67	LCS-6	94%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	127324-A-22	8 || 13 || RPD: 48	LCS-6	94%
Cobalt	mg/kg	1	Metals-020 ICP-AES	<1	127324-A-22	2 || <1	LCS-6	93%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	127324-A-22	51000 || 86000 || RPD: 51	LCS-6	93%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	127324-A-22	0.3 || 0.1 || RPD: 100	LCS-6	94%
Molybdenum	mg/kg	1	Metals-020 ICP-AES	<1	127324-A-22	<1 || <1	LCS-6	94%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	127324-A-22	2 || 3 || RPD: 40	LCS-6	92%
Tin	mg/kg	1	Metals-020 ICP-AES	<1	127324-A-22	93 || 83 || RPD: 11	LCS-6	92%
Selenium	mg/kg	2	Metals-020 ICP-AES	<2	127324-A-22	10 || 10 || RPD: 0	LCS-6	93%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	127324-A-22	890 || 20 || RPD: 191	LCS-6	90%
Manganese	mg/kg	1	Metals-020 ICP-AES	<1	127324-A-22	1 || 2 || RPD: 67	LCS-6	114%
Antimony	mg/kg	7	Metals-020 ICP-AES	<7	127324-A-22	1000 || 240 || RPD: 123	LCS-6	97%
Beryllium	mg/kg	1	Metals-020 ICP-AES	<1	127324-A-22	<1 || <1	LCS-6	103%
Barium	mg/kg	1	Metals-020 ICP-AES	<1	127324-A-22	62 || 120 || RPD: 64	LCS-6	101%
Boron	mg/kg	3	Metals-020 ICP-AES	<3	127324-A-22	220 || 10 || RPD: 183	LCS-6	95%

Report Comments:

Sample is a mix of plastic scrap material. A small portion of most types of material was analysed - however, as the sample was so diverse we cannot guarantee all materials within the sample were covered.

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 127324-A-22 for Cd, Pb, Zn, Sb, Ba, B. Therefore a triplicate result has been issued as laboratory sample number 127324-A-23.

INS: Insufficient sample for this test
NR: Not requested
<: Less than
NA: Test not required

NT: Not tested
PQL: Practical Quantitation Limit
>: Greater than

Quality Control Definitions

LCS: Laboratory Control Sample
RPD: Relative Percent Difference

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.

Laboratory Acceptance Criteria:

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals & 60-140% for organics is acceptable.

CHAIN OF CUSTODY

Douglas Partners
Geotechnics / Environment / Groundwater

Client: Douglas Partners	Project Number 84822	To:	Envirolab Services
Contact Person: Veronica Ku	Project Name: Due Diligence Investigation	Contact Person:	Aileen Hie
Project Mgr: P. Gorman	PO No.:	Address:	12 Ashley Street
Sampler: V.K	lab Quote No. :		Chatswood NSW 2068
Address: 96 Hermitage Road	Date results required: standard	Phone:	02 9910 6200
West Ryde NSW 2114	Or choose: standard / same day / 1 day / 2 day / 3 day	Fax:	02 9910 6201
	Note: Inform lab in advance if urgent turnaround is required - surcharges apply	Email:	ahie@envirolab.com.au
Phone: 9809 0666 Mob: 0457 820 847	Report format: esdat / PDF / Excel	Laboratory Report No:	
Email: veronica.ku @douglaspartners.com.au	Comments	Lab Comments:	

Sample Information				Tests Required										Comments
Lab Sample ID	Field Sample ID	Container Type	Type of sample	17 metals suite: As, Cd, Cr, Cu, Co, Pb, Hg, Mo, Ni, Sn, Se, Zn, Mn, Sb, Be, Ba, B	VOC	8 metals	OCP/PCB	pH, CEC	TRH	BTEX	PAH	Asbestos		Provide as much information about the sample as you can
1	S1/0-0.15	glass	Soil			x	x	x				x		
2	S2/0-0.15	glass	Soil			x	x					x		
3	S3/0-0.15	glass	Soil			x	x					x		
4	S4/0-0.15	glass	Soil			x	x					x		
5	S5/0-0.15	glass	Soil			x	x					x		
6	S6/0-0.15	glass	Soil			x	x		x	x	x	x		Combo 3a
7	S7/0-0.15	glass	Soil			x	x					x		
8	S8/0-0.15	glass	Soil			x	x					x		
9	S9/0-0.15	glass	Soil			x	x					x		
10	S10/0-0.15	glass	Soil			x	x							
11	S11/0-0.15	glass	Soil			x	x	x						
12	S12/0-0.15	glass	Soil			x	x							
13	S13/0-0.15	glass	Soil			x	x							
14	S14/0-0.15	glass	Soil			x	x							
15	S15/0-0.15	glass	Soil			x	x					x		
16	S16/0-0.15	glass	Soil			x	x					x		
17	S17/0-0.15	glass	Soil			x	x	x				x		
22 - NR	B1	plastic	plastic	x	x									
18	BD1/300415	glass	Soil			x			x	x				Combo 1m
19	BD2/300415	glass	Soil			x			x	x				Combo 1m
20	TS/300415	glass	Soil							x				
21	TB/300415	glass	Soil							x				

6/5/15 D.F.

#22

5/5

ENVIROLAB GROUP
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 127324 — A
Date Received: 01/5/2015
Time Received: 18.00
Received by: PL
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

12.2

Relinquished by: Douglas Partners	Sample Receipt	*Lab use only:*
Hand delivered / Courier (by whom)	Received by (Company): EIS	Samples Received: Cool or Ambient (circle one)
Condition of Sample at dispatch Cool or Ambient (circle)	Print Name: P. Raj	Temperature Received at: (if applicable)
Temperature (if Applicable):	Date & Time: 1/5/15 18.00	Transported by: Hand delivered / courier
Print Name:	Signature: PR	
Date & Time:		
Signature:		

Page____of ___

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 127666

Client:
Douglas Partners Pty Ltd
96 Hermitage Rd
West Ryde
NSW 2114

Attention: Veronica Ku, Paul Gorman

Sample log in details:

Your Reference:	**84822, Due Diligence Investigation**		
No. of samples:	45 soils		
Date samples received / completed instructions received	08/05/15	/	08/05/15

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: / Issue Date:	15/05/15	/	15/05/15
Date of Preliminary Report:	Not Issued		

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Results Approved By:

Jacinta Hurst
Laboratory Manager

VOCs in soil Our Reference: Your Reference Depth Type of sample	UNITS ---------- ----------	127666-13 BH2 0.4-0.5 Soil	127666-15 BH3 0.4-0.5 Soil	127666-17 BH4 0.9-1 Soil	127666-20 BH7 0-0.1 Soil	127666-33 BH13 0.4-0.5 Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
Dichlorodifluoromethane	mg/kg	<1	<1	<1	<1	<1
Chloromethane	mg/kg	<1	<1	<1	<1	<1
Vinyl Chloride	mg/kg	<1	<1	<1	<1	<1
Bromomethane	mg/kg	<1	<1	<1	<1	<1
Chloroethane	mg/kg	<1	<1	<1	<1	<1
Trichlorofluoromethane	mg/kg	<1	<1	<1	<1	<1
1,1-Dichloroethene	mg/kg	<1	<1	<1	<1	<1
trans-1,2-dichloroethene	mg/kg	<1	<1	<1	<1	<1
1,1-dichloroethane	mg/kg	<1	<1	<1	<1	<1
cis-1,2-dichloroethene	mg/kg	<1	<1	<1	<1	<1
bromochloromethane	mg/kg	<1	<1	<1	<1	<1
chloroform	mg/kg	<1	<1	<1	<1	<1
2,2-dichloropropane	mg/kg	<1	<1	<1	<1	<1
1,2-dichloroethane	mg/kg	<1	<1	<1	<1	<1
1,1,1-trichloroethane	mg/kg	<1	<1	<1	<1	<1
1,1-dichloropropene	mg/kg	<1	<1	<1	<1	<1
Cyclohexane	mg/kg	<1	<1	<1	<1	<1
carbon tetrachloride	mg/kg	<1	<1	<1	<1	<1
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
dibromomethane	mg/kg	<1	<1	<1	<1	<1
1,2-dichloropropane	mg/kg	<1	<1	<1	<1	<1
trichloroethene	mg/kg	<1	<1	<1	<1	<1
bromodichloromethane	mg/kg	<1	<1	<1	<1	<1
trans-1,3-dichloropropene	mg/kg	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	mg/kg	<1	<1	<1	<1	<1
1,1,2-trichloroethane	mg/kg	<1	<1	<1	<1	<1
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichloropropane	mg/kg	<1	<1	<1	<1	<1
dibromochloromethane	mg/kg	<1	<1	<1	<1	<1
1,2-dibromoethane	mg/kg	<1	<1	<1	<1	<1
tetrachloroethene	mg/kg	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	mg/kg	<1	<1	<1	<1	<1
chlorobenzene	mg/kg	<1	<1	<1	<1	<1
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
bromoform	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
styrene	mg/kg	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	mg/kg	<1	<1	<1	<1	<1
o-Xylene	mg/kg	<1	<1	<1	<1	<1
1,2,3-trichloropropane	mg/kg	<1	<1	<1	<1	<1

VOCs in soil Our Reference: Your Reference Depth Type of sample	UNITS ---------- ----------	127666-13 BH2 0.4-0.5 Soil	127666-15 BH3 0.4-0.5 Soil	127666-17 BH4 0.9-1 Soil	127666-20 BH7 0-0.1 Soil	127666-33 BH13 0.4-0.5 Soil
isopropylbenzene	mg/kg	<1	<1	<1	<1	<1
bromobenzene	mg/kg	<1	<1	<1	<1	<1
n-propyl benzene	mg/kg	<1	<1	<1	<1	<1
2-chlorotoluene	mg/kg	<1	<1	<1	<1	<1
4-chlorotoluene	mg/kg	<1	<1	<1	<1	<1
1,3,5-trimethyl benzene	mg/kg	<1	<1	<1	<1	<1
tert-butyl benzene	mg/kg	<1	<1	<1	<1	<1
1,2,4-trimethyl benzene	mg/kg	<1	<1	<1	<1	<1
1,3-dichlorobenzene	mg/kg	<1	<1	<1	<1	<1
sec-butyl benzene	mg/kg	<1	<1	<1	<1	<1
1,4-dichlorobenzene	mg/kg	<1	<1	<1	<1	<1
4-isopropyl toluene	mg/kg	<1	<1	<1	<1	<1
1,2-dichlorobenzene	mg/kg	<1	<1	<1	<1	<1
n-butyl benzene	mg/kg	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	mg/kg	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	mg/kg	<1	<1	<1	<1	<1
hexachlorobutadiene	mg/kg	<1	<1	<1	<1	<1
1,2,3-trichlorobenzene	mg/kg	<1	<1	<1	<1	<1
Surrogate Dibromofluorometha	%	107	107	109	102	108
Surrogate aaa-Trifluorotoluene	%	102	103	103	99	102
Surrogate Toluene-d_8	%	105	105	104	96	104
Surrogate 4-Bromofluorobenzene	%	95	93	94	98	95

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	127666-1	127666-2	127666-3	127666-4	127666-5
Your Reference	----------	BD4-300415	BD2-040515	BD3-050515	BD1-060515	TS/040515
Depth	----------	-	-	-	-	-
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	13/05/2015	13/05/2015	13/05/2015	13/05/2015	13/05/2015
TRHC$_6$ - C$_9$	mg/kg	<25	<25	<25	<25	[NA]
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25	<25	<25	[NA]
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	<25	<25	<25	[NA]
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	109%
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	108%
Ethylbenzene	mg/kg	<1	<1	<1	<1	109%
m+p-xylene	mg/kg	<2	<2	<2	<2	109%
o-Xylene	mg/kg	<1	<1	<1	<1	107%
naphthalene	mg/kg	<1	<1	<1	<1	[NA]
Surrogate aaa-Trifluorotoluene	%	101	102	99	99	103

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	127666-6	127666-7	127666-8	127666-9	127666-10
Your Reference	----------	TB/040515	TS/050515	TB/050515	TS/060515	TB/060515
Depth	----------	-	-	-	-	-
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	13/05/2015	13/05/2015	13/05/2015	13/05/2015	13/05/2015
Benzene	mg/kg	<0.2	89%	<0.2	103%	<0.2
Toluene	mg/kg	<0.5	89%	<0.5	103%	<0.5
Ethylbenzene	mg/kg	<1	88%	<1	103%	<1
m+p-xylene	mg/kg	<2	88%	<2	103%	<2
o-Xylene	mg/kg	<1	88%	<1	102%	<1
Surrogate aaa-Trifluorotoluene	%	103	85	105	100	95

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	127666-11	127666-12	127666-13	127666-14	127666-15
Your Reference	----------	BH1	BH2	BH2	BH3	BH3
Depth	----------	0-0.1	0-0.1	0.4-0.5	0-0.1	0.4-0.5
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	13/05/2015	13/05/2015	12/05/2015	13/05/2015	12/05/2015
TRHC$_6$ - C$_9$	mg/kg	<25	<25	<25	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25	<25	<25	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	101	97	102	99	103

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	127666-16	127666-17	127666-18	127666-19	127666-20
Your Reference	----------	BH4	BH4	BH5	BH6	BH7
Depth	----------	0-0.1	0.9-1	0.0-0.1	0-0.1	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	13/05/2015	12/05/2015	13/05/2015	13/05/2015	12/05/2015
TRHC$_6$ - C$_9$	mg/kg	<25	<25	<25	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25	<25	<25	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	94	103	99	101	99

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	127666-21	127666-22	127666-23	127666-24	127666-25
Your Reference	----------	BH7	BH7	BH8	BH9	BH9
Depth	----------	0.8-1.0	2.4-2.5	0-0.1	0-0.1	1.5-1.6
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	13/05/2015	13/05/2015	13/05/2015	13/05/2015	13/05/2015
TRHC$_6$ - C$_9$	mg/kg	<25	<25	<25	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25	<25	<25	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	98	94	96	100	102

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	127666-26	127666-27	127666-28	127666-29	127666-30
Your Reference	----------	BH9	BH9	BH10	BH11	BH12
Depth	----------	2.4-2.5	5.4-5.5	0-0.1	0-0.1	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	13/05/2015	13/05/2015	13/05/2015	13/05/2015	13/05/2015
TRHC$_6$ - C$_9$	mg/kg	<25	<25	<25	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25	<25	<25	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	97	102	97	92	101

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	127666-31	127666-32	127666-33	127666-34	127666-35
Your Reference	----------	BH12	BH13	BH13	BH14	BH14
Depth	----------	0.4-0.5	0-0.1	0.4-0.5	0-0.1	0.7-0.8
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	13/05/2015	13/05/2015	12/05/2015	13/05/2015	13/05/2015
TRHC$_6$ - C$_9$	mg/kg	<25	<25	<25	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25	<25	<25	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	100	101	102	98	95

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	127666-36	127666-37	127666-38	127666-39	127666-40
Your Reference	----------	BH14	BH15	BH15	BH15	BH16
Depth	----------	1.4-1.5	0-0.1	0.3-0.4	1.4-1.5	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	13/05/2015	13/05/2015	13/05/2015	13/05/2015	13/05/2015
TRHC$_6$ - C$_9$	mg/kg	<25	<25	<25	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25	<25	<25	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	99	93	99	98	92

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	127666-41	127666-42	127666-43	127666-44	127666-45
Your Reference	----------	BH17	BH18	BH19	BH19	BH20
Depth	----------	0-0.1	0-0.1	0-0.1	0.5-0.6	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	13/05/2015	13/05/2015	13/05/2015	13/05/2015	13/05/2015
TRHC$_6$ - C$_9$	mg/kg	<25	<25	<25	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25	<25	<25	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	95	102	100	99	98

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	127666-1	127666-2	127666-3	127666-4	127666-11
Your Reference	----------	BD4-300415	BD2-040515	BD3-050515	BD1-060515	BH1
Depth	----------	-	-	-	-	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	140	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	170	<100	<100	<100
Surrogate o-Terphenyl	%	89	86	83	84	87

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	127666-12	127666-13	127666-14	127666-15	127666-16
Your Reference	----------	BH2	BH2	BH3	BH3	BH4
Depth	----------	0-0.1	0.4-0.5	0-0.1	0.4-0.5	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	82	83	83	82	90

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	127666-17	127666-18	127666-19	127666-20	127666-21
Your Reference	----------	BH4	BH5	BH6	BH7	BH7
Depth	----------	0.9-1	0.0-0.1	0-0.1	0-0.1	0.8-1.0
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	13/05/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	100	84	82	82	81

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	127666-22	127666-23	127666-24	127666-25	127666-26
Your Reference	----------	BH7	BH8	BH9	BH9	BH9
Depth	----------	2.4-2.5	0-0.1	0-0.1	1.5-1.6	2.4-2.5
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	13/05/2015	13/05/2015	13/05/2015	13/05/2015	13/05/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	79	80	81	81	79

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	127666-27	127666-28	127666-29	127666-30	127666-31
Your Reference	----------	BH9	BH10	BH11	BH12	BH12
Depth	----------	5.4-5.5	0-0.1	0-0.1	0-0.1	0.4-0.5
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	13/05/2015	13/05/2015	13/05/2015	13/05/2015	13/05/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	82	81	87	77	82

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	127666-32	127666-33	127666-34	127666-35	127666-36
Your Reference	----------	BH13	BH13	BH14	BH14	BH14
Depth	----------	0-0.1	0.4-0.5	0-0.1	0.7-0.8	1.4-1.5
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	13/05/2015	13/05/2015	13/05/2015	13/05/2015	13/05/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	80	81	79	85	82

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	127666-37	127666-38	127666-39	127666-40	127666-41
Your Reference	----------	BH15	BH15	BH15	BH16	BH17
Depth	----------	0-0.1	0.3-0.4	1.4-1.5	0-0.1	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	13/05/2015	13/05/2015	13/05/2015	13/05/2015	13/05/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	160	<100	120	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	160	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	120	140	<100	170	<100
Surrogate o-Terphenyl	%	82	85	83	80	88

svTRH (C10-C40) in Soil					
Our Reference:	UNITS	127666-42	127666-43	127666-44	127666-45
Your Reference	----------	BH18	BH19	BH19	BH20
Depth	----------	0-0.1	0-0.1	0.5-0.6	0-0.1
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	13/05/2015	13/05/2015	13/05/2015	13/05/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	170	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	120	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	300	<100	<100	<100
Surrogate o-Terphenyl	%	80	91	83	80

PAHs in Soil Our Reference: Your Reference Depth Type of sample	UNITS ---------- ----------	127666-11 BH1 0-0.1 Soil	127666-12 BH2 0-0.1 Soil	127666-13 BH2 0.4-0.5 Soil	127666-14 BH3 0-0.1 Soil	127666-15 BH3 0.4-0.5 Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.3	<0.1	<0.1	0.1	0.3
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.6	<0.1	<0.1	0.3	0.5
Pyrene	mg/kg	0.6	<0.1	<0.1	0.3	0.5
Benzo(a)anthracene	mg/kg	0.2	<0.1	<0.1	0.1	0.2
Chrysene	mg/kg	0.2	<0.1	<0.1	0.1	0.2
Benzo(b,j+k)fluoranthene	mg/kg	0.4	<0.2	<0.2	0.3	0.3
Benzo(a)pyrene	mg/kg	0.3	<0.05	<0.05	0.1	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	0.2	<0.1	<0.1	<0.1	0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.2	<0.1	<0.1	0.1	0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	3.1	NIL (+)VE	NIL (+)VE	1.4	2.5
Surrogate p-Terphenyl-d14	%	88	100	104	104	102

PAHs in Soil Our Reference: Your Reference Depth Type of sample	UNITS ---------- ----------	127666-16 BH4 0-0.1 Soil	127666-17 BH4 0.9-1 Soil	127666-18 BH5 0.0-0.1 Soil	127666-19 BH6 0-0.1 Soil	127666-20 BH7 0-0.1 Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.2	<0.1	<0.1	0.4	0.5
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	0.1
Fluoranthene	mg/kg	1.0	0.1	<0.1	0.8	1.1
Pyrene	mg/kg	1.2	0.1	<0.1	0.8	1.1
Benzo(a)anthracene	mg/kg	0.7	<0.1	<0.1	0.2	0.7
Chrysene	mg/kg	0.7	<0.1	<0.1	0.3	0.6
Benzo(b,j+k)fluoranthene	mg/kg	2	<0.2	<0.2	0.5	1
Benzo(a)pyrene	mg/kg	1.0	0.07	<0.05	0.3	0.74
Indeno(1,2,3-c,d)pyrene	mg/kg	0.7	<0.1	<0.1	0.2	0.4
Dibenzo(a,h)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.7	<0.1	<0.1	0.3	0.4
Benzo(a)pyrene TEQ calc (zero)	mg/kg	1.4	<0.5	<0.5	<0.5	1
Benzo(a)pyrene TEQ calc(half)	mg/kg	1.4	<0.5	<0.5	<0.5	1.0
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	1.4	<0.5	<0.5	0.5	1.1
Total Positive PAHs	mg/kg	7.9	0.30	NIL (+)VE	3.9	6.9
Surrogate p-Terphenyl-d14	%	109	123	101	99	110

PAHs in Soil Our Reference: Your Reference Depth Type of sample	UNITS ---------- ----------	127666-21 BH7 0.8-1.0 Soil	127666-22 BH7 2.4-2.5 Soil	127666-23 BH8 0-0.1 Soil	127666-24 BH9 0-0.1 Soil	127666-25 BH9 1.5-1.6 Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.8	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.3	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	1.4	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	1.4	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.7	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.7	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	1	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.76	<0.05	<0.05	<0.05	0.08
Indeno(1,2,3-c,d)pyrene	mg/kg	0.4	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.5	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	1.0	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	1.0	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	1.1	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	8.1	NIL (+)VE	NIL (+)VE	NIL (+)VE	0.080
Surrogate p-Terphenyl-d14	%	97	102	98	103	99

PAHs in Soil Our Reference: Your Reference Depth Type of sample	UNITS ---------- ----------	127666-26 BH9 2.4-2.5 Soil	127666-27 BH9 5.4-5.5 Soil	127666-28 BH10 0-0.1 Soil	127666-29 BH11 0-0.1 Soil	127666-30 BH12 0-0.1 Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	0.4	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Fluoranthene	mg/kg	0.2	<0.1	<0.1	0.7	<0.1
Pyrene	mg/kg	0.3	<0.1	<0.1	0.7	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	0.4	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	0.3	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.3	<0.2	<0.2	0.7	<0.2
Benzo(a)pyrene	mg/kg	0.2	<0.05	<0.05	0.4	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	<0.1	<0.1	0.2	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.1	<0.1	<0.1	0.2	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	0.6	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	0.6	<0.5
Total Positive PAHs	mg/kg	1.5	NIL (+)VE	NIL (+)VE	4.2	NIL (+)VE
Surrogate p-Terphenyl-d14	%	98	101	99	109	101

PAHs in Soil Our Reference: Your Reference Depth Type of sample	UNITS ---------- ----------	127666-31 BH12 0.4-0.5 Soil	127666-32 BH13 0-0.1 Soil	127666-33 BH13 0.4-0.5 Soil	127666-34 BH14 0-0.1 Soil	127666-35 BH14 0.7-0.8 Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	0.7	<0.1	0.2
Anthracene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.9	<0.1	0.5
Pyrene	mg/kg	<0.1	<0.1	1	<0.1	0.6
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.4	<0.1	0.3
Chrysene	mg/kg	<0.1	<0.1	0.4	<0.1	0.3
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	0.7	<0.2	0.6
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.5	<0.05	0.3
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	0.2	<0.1	0.2
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	0.2	<0.1	0.2
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	0.6	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	0.6	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	0.7	<0.5	0.5
Total Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	5.2	NIL (+)VE	3.2
Surrogate p-Terphenyl-d14	%	104	87	96	97	105

PAHs in Soil Our Reference: Your Reference Depth Type of sample	UNITS ---------- ----------	127666-36 BH14 1.4-1.5 Soil	127666-37 BH15 0-0.1 Soil	127666-38 BH15 0.3-0.4 Soil	127666-39 BH15 1.4-1.5 Soil	127666-40 BH16 0-0.1 Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Naphthalene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	0.6	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	0.1	0.2	<0.1	0.1
Anthracene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.4	0.2	<0.1	0.3
Pyrene	mg/kg	<0.1	0.4	0.9	0.1	0.3
Benzo(a)anthracene	mg/kg	<0.1	0.2	0.5	<0.1	0.2
Chrysene	mg/kg	<0.1	0.2	0.4	<0.1	0.2
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	0.5	3.0	0.3	0.4
Benzo(a)pyrene	mg/kg	<0.05	0.3	3.4	0.3	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.2	2.6	0.2	0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	0.6	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.3	3.6	0.3	0.2
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	4.6	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	0.5	4.6	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	0.5	4.6	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL (+)VE	2.7	17	1.2	2.0
Surrogate p-Terphenyl-d14	%	102	103	105	103	103

PAHs in Soil Our Reference: Your Reference Depth Type of sample	UNITS ---------- ----------	127666-41 BH17 0-0.1 Soil	127666-42 BH18 0-0.1 Soil	127666-43 BH19 0-0.1 Soil	127666-44 BH19 0.5-0.6 Soil	127666-45 BH20 0-0.1 Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.1	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	1.3	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	106	93	106	101	97

Organochlorine Pesticides in soil						
Our Reference:	UNITS	127666-11	127666-12	127666-14	127666-16	127666-18
Your Reference	----------	BH1	BH2	BH3	BH4	BH5
Depth	----------	0-0.1	0-0.1	0-0.1	0-0.1	0.0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	105	100	102	112	105

Organochlorine Pesticides in soil						
Our Reference:	UNITS	127666-19	127666-20	127666-23	127666-24	127666-28
Your Reference	----------	BH6	BH7	BH8	BH9	BH10
Depth	----------	0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	102	99	102	100	101

Organochlorine Pesticides in soil						
Our Reference:	UNITS	127666-29	127666-30	127666-32	127666-34	127666-37
Your Reference	----------	BH11	BH12	BH13	BH14	BH15
Depth	----------	0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	106	101	103	101	101

Organochlorine Pesticides in soil						
Our Reference:	UNITS	127666-40	127666-41	127666-42	127666-43	127666-45
Your Reference	----------	BH16	BH17	BH18	BH19	BH20
Depth	----------	0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	101	110	102	108	100

Organophosphorus Pesticides						
Our Reference:	UNITS	127666-11	127666-12	127666-14	127666-16	127666-18
Your Reference	----------	BH1	BH2	BH3	BH4	BH5
Depth	----------	0-0.1	0-0.1	0-0.1	0-0.1	0.0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	105	100	102	112	105

Organophosphorus Pesticides						
Our Reference:	UNITS	127666-19	127666-20	127666-23	127666-24	127666-28
Your Reference	----------	BH6	BH7	BH8	BH9	BH10
Depth	----------	0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	102	99	102	100	101

Organophosphorus Pesticides						
Our Reference:	UNITS	127666-29	127666-30	127666-32	127666-34	127666-37
Your Reference	----------	BH11	BH12	BH13	BH14	BH15
Depth	----------	0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	106	101	103	101	101

Organophosphorus Pesticides						
Our Reference:	UNITS	127666-40	127666-41	127666-42	127666-43	127666-45
Your Reference	----------	BH16	BH17	BH18	BH19	BH20
Depth	----------	0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	101	110	102	108	100

PCBs in Soil						
Our Reference:	UNITS	127666-11	127666-12	127666-14	127666-16	127666-18
Your Reference	----------	BH1	BH2	BH3	BH4	BH5
Depth	----------	0-0.1	0-0.1	0-0.1	0-0.1	0.0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	105	100	102	112	105

PCBs in Soil						
Our Reference:	UNITS	127666-19	127666-20	127666-23	127666-24	127666-28
Your Reference	----------	BH6	BH7	BH8	BH9	BH10
Depth	----------	0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	102	99	102	100	101

PCBs in Soil						
Our Reference:	UNITS	127666-29	127666-30	127666-32	127666-34	127666-37
Your Reference	----------	BH11	BH12	BH13	BH14	BH15
Depth	----------	0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	106	101	103	101	101

PCBs in Soil						
Our Reference:	UNITS	127666-40	127666-41	127666-42	127666-43	127666-45
Your Reference	----------	BH16	BH17	BH18	BH19	BH20
Depth	----------	0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	101	110	102	108	100

Acid Extractable metals in soil						
Our Reference:	UNITS	127666-1	127666-2	127666-3	127666-4	127666-11
Your Reference	----------	BD4-300415	BD2-040515	BD3-050515	BD1-060515	BH1
Depth	----------	-	-	-	-	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Arsenic	mg/kg	6	6	10	9	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	0.5	<0.4
Chromium	mg/kg	19	13	20	21	16
Copper	mg/kg	26	14	19	14	26
Lead	mg/kg	15	16	22	44	39
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	12	6	10	4	12
Zinc	mg/kg	33	63	30	38	52

Acid Extractable metals in soil						
Our Reference:	UNITS	127666-12	127666-13	127666-14	127666-15	127666-16
Your Reference	----------	BH2	BH2	BH3	BH3	BH4
Depth	----------	0-0.1	0.4-0.5	0-0.1	0.4-0.5	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	12/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Arsenic	mg/kg	6	5	7	8	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	14	11	16	18	10
Copper	mg/kg	15	17	15	13	21
Lead	mg/kg	17	15	60	42	49
Mercury	mg/kg	<0.1	<0.1	0.1	<0.1	0.2
Nickel	mg/kg	7	10	5	5	7
Zinc	mg/kg	21	28	58	42	45

Acid Extractable metals in soil						
Our Reference:	UNITS	127666-17	127666-18	127666-19	127666-20	127666-21
Your Reference	----------	BH4	BH5	BH6	BH7	BH7
Depth	----------	0.9-1	0.0-0.1	0-0.1	0-0.1	0.8-1.0
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Arsenic	mg/kg	10	6	7	6	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	1
Chromium	mg/kg	19	19	20	17	16
Copper	mg/kg	15	19	24	43	25
Lead	mg/kg	26	23	31	160	50
Mercury	mg/kg	<0.1	<0.1	<0.1	0.4	0.1
Nickel	mg/kg	8	8	13	13	9
Zinc	mg/kg	25	26	55	130	62

Acid Extractable metals in soil						
Our Reference:	UNITS	127666-22	127666-23	127666-24	127666-25	127666-26
Your Reference	----------	BH7	BH8	BH9	BH9	BH9
Depth	----------	2.4-2.5	0-0.1	0-0.1	1.5-1.6	2.4-2.5
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Arsenic	mg/kg	12	7	7	9	7
Cadmium	mg/kg	0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	16	18	8	19	18
Copper	mg/kg	23	18	39	21	22
Lead	mg/kg	62	24	16	26	24
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	7	12	28	13	13
Zinc	mg/kg	150	33	100	43	44

Acid Extractable metals in soil						
Our Reference:	UNITS	127666-27	127666-28	127666-29	127666-30	127666-31
Your Reference	----------	BH9	BH10	BH11	BH12	BH12
Depth	----------	5.4-5.5	0-0.1	0-0.1	0-0.1	0.4-0.5
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Arsenic	mg/kg	4	10	4	<4	11
Cadmium	mg/kg	<0.4	<0.4	4	<0.4	<0.4
Chromium	mg/kg	12	18	200	85	13
Copper	mg/kg	18	16	330	24	34
Lead	mg/kg	10	25	78	7	19
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	7	9	150	77	16
Zinc	mg/kg	22	27	290	54	82

Acid Extractable metals in soil						
Our Reference:	UNITS	127666-32	127666-33	127666-34	127666-35	127666-36
Your Reference	----------	BH13	BH13	BH14	BH14	BH14
Depth	----------	0-0.1	0.4-0.5	0-0.1	0.7-0.8	1.4-1.5
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Arsenic	mg/kg	5	7	7	5	<4
Cadmium	mg/kg	<0.4	0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	9	14	11	15	20
Copper	mg/kg	16	41	24	15	9
Lead	mg/kg	14	140	16	43	15
Mercury	mg/kg	<0.1	0.2	<0.1	0.2	<0.1
Nickel	mg/kg	7	8	7	4	2
Zinc	mg/kg	34	190	48	37	11

Acid Extractable metals in soil						
Our Reference:	UNITS	127666-37	127666-38	127666-39	127666-40	127666-41
Your Reference	----------	BH15	BH15	BH15	BH16	BH17
Depth	----------	0-0.1	0.3-0.4	1.4-1.5	0-0.1	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Arsenic	mg/kg	6	5	5	<4	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	18	27	15	20	15
Copper	mg/kg	18	22	30	20	15
Lead	mg/kg	19	14	13	13	26
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	10	27	10	15	11
Zinc	mg/kg	81	79	53	58	37

Acid Extractable metals in soil						
Our Reference:	UNITS	127666-42	127666-43	127666-44	127666-45	127666-46
Your Reference	----------	BH18	BH19	BH19	BH20	BH7 - TRIPLICATE
Depth	----------	0-0.1	0-0.1	0.5-0.6	0-0.1	0.8-1.0
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Arsenic	mg/kg	<4	<4	6	7	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	3
Chromium	mg/kg	9	12	18	18	19
Copper	mg/kg	54	50	31	21	37
Lead	mg/kg	6	18	15	21	52
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Nickel	mg/kg	38	15	12	13	16
Zinc	mg/kg	92	65	27	36	98

Misc Soil - Inorg						
Our Reference:	UNITS	127666-11	127666-12	127666-14	127666-16	127666-18
Your Reference	----------	BH1	BH2	BH3	BH4	BH5
Depth	----------	0-0.1	0-0.1	0-0.1	0-0.1	0.0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference:	UNITS	127666-19	127666-20	127666-23	127666-24	127666-28
Your Reference	----------	BH6	BH7	BH8	BH9	BH10
Depth	----------	0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference:	UNITS	127666-29	127666-30	127666-32	127666-34	127666-37
Your Reference	----------	BH11	BH12	BH13	BH14	BH15
Depth	----------	0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference:	UNITS	127666-40	127666-41	127666-42	127666-43	127666-45
Your Reference	----------	BH16	BH17	BH18	BH19	BH20
Depth	----------	0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Moisture						
Our Reference:	UNITS	127666-1	127666-2	127666-3	127666-4	127666-11
Your Reference	----------	BD4-300415	BD2-040515	BD3-050515	BD1-060515	BH1
Depth	----------	-	-	-	-	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
Moisture	%	17	12	18	17	19

Moisture						
Our Reference:	UNITS	127666-12	127666-13	127666-14	127666-15	127666-16
Your Reference	----------	BH2	BH2	BH3	BH3	BH4
Depth	----------	0-0.1	0.4-0.5	0-0.1	0.4-0.5	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
Moisture	%	17	20	13	15	17

Moisture						
Our Reference:	UNITS	127666-17	127666-18	127666-19	127666-20	127666-21
Your Reference	----------	BH4	BH5	BH6	BH7	BH7
Depth	----------	0.9-1	0.0-0.1	0-0.1	0-0.1	0.8-1.0
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
Moisture	%	24	18	19	15	13

Moisture						
Our Reference:	UNITS	127666-22	127666-23	127666-24	127666-25	127666-26
Your Reference	----------	BH7	BH8	BH9	BH9	BH9
Depth	----------	2.4-2.5	0-0.1	0-0.1	1.5-1.6	2.4-2.5
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
Moisture	%	21	19	10	18	18

Moisture						
Our Reference:	UNITS	127666-27	127666-28	127666-29	127666-30	127666-31
Your Reference	----------	BH9	BH10	BH11	BH12	BH12
Depth	----------	5.4-5.5	0-0.1	0-0.1	0-0.1	0.4-0.5
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
Moisture	%	18	18	7.9	10	11

Moisture						
Our Reference:	UNITS	127666-32	127666-33	127666-34	127666-35	127666-36
Your Reference	----------	BH13	BH13	BH14	BH14	BH14
Depth	----------	0-0.1	0.4-0.5	0-0.1	0.7-0.8	1.4-1.5
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
Moisture	%	12	13	15	13	18

Moisture						
Our Reference:	UNITS	127666-37	127666-38	127666-39	127666-40	127666-41
Your Reference	----------	BH15	BH15	BH15	BH16	BH17
Depth	----------	0-0.1	0.3-0.4	1.4-1.5	0-0.1	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015	12/05/2015
Moisture	%	12	13	17	13	21

Moisture					
Our Reference:	UNITS	127666-42	127666-43	127666-44	127666-45
Your Reference	----------	BH18	BH19	BH19	BH20
Depth	----------	0-0.1	0-0.1	0.5-0.6	0-0.1
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	11/05/2015	11/05/2015	11/05/2015	11/05/2015
Date analysed	-	12/05/2015	12/05/2015	12/05/2015	12/05/2015
Moisture	%	4.5	12	15	17

Asbestos ID - soils						
Our Reference:	UNITS	127666-11	127666-12	127666-14	127666-16	127666-18
Your Reference	----------	BH1	BH2	BH3	BH4	BH5
Depth	----------	0-0.1	0-0.1	0-0.1	0-0.1	0.0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	14/05/2015	14/05/2015	14/05/2015	14/05/2015	14/05/2015
Sample mass tested	g	Approx. 35g	Approx. 35g	Approx. 35g	Approx. 35g	Approx. 35g
Sample Description	-	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference:	UNITS	127666-19	127666-20	127666-21	127666-22	127666-23
Your Reference	----------	BH6	BH7	BH7	BH7	BH8
Depth	----------	0-0.1	0-0.1	0.8-1.0	2.4-2.5	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	14/05/2015	14/05/2015	14/05/2015	14/05/2015	14/05/2015
Sample mass tested	g	Approx. 40g	Approx. 35g	Approx. 30g	Approx. 30g	Approx. 35g
Sample Description	-	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference:	UNITS	127666-24	127666-25	127666-26	127666-27	127666-28
Your Reference	----------	BH9	BH9	BH9	BH9	BH10
Depth	----------	0-0.1	1.5-1.6	2.4-2.5	5.4-5.5	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	14/05/2015	14/05/2015	14/05/2015	14/05/2015	14/05/2015
Sample mass tested	g	Approx. 35g	Approx. 35g	Approx. 40g	Approx. 40g	Approx. 35g
Sample Description	-	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference:	UNITS	127666-29	127666-30	127666-32	127666-33	127666-34
Your Reference	----------	BH11	BH12	BH13	BH13	BH14
Depth	----------	0-0.1	0-0.1	0-0.1	0.4-0.5	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	14/05/2015	14/05/2015	14/05/2015	14/05/2015	14/05/2015
Sample mass tested	g	Approx. 40g	Approx. 20	Approx. 20	Approx. 15g	Approx. 25g
Sample Description	-	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference:	UNITS	127666-35	127666-36	127666-37	127666-38	127666-40
Your Reference	----------	BH14	BH14	BH15	BH15	BH16
Depth	----------	0.7-0.8	1.4-1.5	0-0.1	0.3-0.4	0-0.1
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	14/05/2015	14/05/2015	14/05/2015	14/05/2015	14/05/2015
Sample mass tested	g	Approx. 50g	Approx. 30g	Approx. 50g	Approx. 35g	Approx. 35g
Sample Description	-	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils					
Our Reference:	UNITS	127666-41	127666-42	127666-43	127666-45
Your Reference	----------	BH17	BH18	BH19	BH20
Depth	----------	0-0.1	0-0.1	0-0.1	0-0.1
Type of sample		Soil	Soil	Soil	Soil
Date analysed	-	14/05/2015	14/05/2015	14/05/2015	14/05/2015
Sample mass tested	g	Approx. 30g	Approx. 35g	Approx. 40g	Approx. 35g
Sample Description	-	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks	Brown coarse-grain soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Misc Inorg - Soil				
Our Reference:	UNITS	127666-19	127666-25	127666-44
Your Reference	----------	BH6	BH9	BH19
Depth	----------	0-0.1	1.5-1.6	0.5-0.6
Type of sample		Soil	Soil	Soil
Date prepared	-	12/05/2015	12/05/2015	12/05/2015
Date analysed	-	14/05/2015	14/05/2015	14/05/2015
pH 1:5 soil:water	pH Units	7.5	7.8	5.7

CEC Our Reference: Your Reference Depth Type of sample	UNITS ---------- ----------	127666-19 BH6 0-0.1 Soil	127666-25 BH9 1.5-1.6 Soil	127666-44 BH19 0.5-0.6 Soil
Date extracted	-	13/05/2015	13/05/2015	13/05/2015
Date analysed	-	13/05/2015	13/05/2015	13/05/2015
Exchangeable Ca	meq/100g	7.9	6.0	7.0
Exchangeable K	meq/100g	0.2	0.2	0.3
Exchangeable Mg	meq/100g	6.3	3.5	6.3
Exchangeable Na	meq/100g	1.4	0.45	1.6
Cation Exchange Capacity	meq/100g	16	10	15

Method ID	Methodology Summary
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-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-012 subset	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. 'TEQ 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. 'TEQ 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. 'TEQ 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-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	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.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
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-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
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-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Metals-009	Determination of exchangeable cations and cation exchange capacity in soil based on Rayment and Lyons 2011.

QUALITY CONTROL VOCs in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			11/05/2015	[NT]	[NT]	LCS-8	11/05/2015
Date analysed	-			12/05/2015	[NT]	[NT]	LCS-8	12/05/2015
Dichlorodifluoromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Chloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Vinyl Chloride	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Bromomethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Chloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Trichlorofluoromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,1-Dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
trans-1,2-dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,1-dichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-8	101%
cis-1,2-dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
bromochloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
chloroform	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-8	103%
2,2-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-8	89%
1,1,1-trichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-8	102%
1,1-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Cyclohexane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
carbon tetrachloride	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Benzene	mg/kg	0.2	Org-014	<0.2	[NT]	[NT]	[NR]	[NR]
dibromomethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
trichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-8	114%
bromodichloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-8	116%
trans-1,3-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
cis-1,3-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,1,2-trichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Toluene	mg/kg	0.5	Org-014	<0.5	[NT]	[NT]	[NR]	[NR]
1,3-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
dibromochloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-8	107%
1,2-dibromoethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
tetrachloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-8	112%
1,1,1,2-tetrachloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
chlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Ethylbenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
bromoform	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
m+p-xylene	mg/kg	2	Org-014	<2	[NT]	[NT]	[NR]	[NR]
styrene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
o-Xylene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2,3-trichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL VOCs in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
isopropylbenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
bromobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
n-propyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
2-chlorotoluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
4-chlorotoluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,3,5-trimethyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
tert-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2,4-trimethyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,3-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
sec-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,4-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
4-isopropyl toluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
n-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2-dibromo-3-chloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2,4-trichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
hexachlorobutadiene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2,3-trichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluorometha	%		Org-014	108	[NT]	[NT]	LCS-8	105%
Surrogate aaa-Trifluorotoluene	%		Org-014	104	[NT]	[NT]	LCS-8	104%
Surrogate Toluene-d_8	%		Org-014	106	[NT]	[NT]	LCS-8	109%
Surrogate 4-Bromofluorobenzene	%		Org-014	94	[NT]	[NT]	LCS-8	98%

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			11/05/2015	127666-11	11/05/2015 || 11/05/2015	LCS-8	11/05/2015
Date analysed	-			13/05/2015	127666-11	13/05/2015 || 13/05/2015	LCS-8	13/05/2015
TRHC$_{6}$ - C$_{9}$	mg/kg	25	Org-016	<25	127666-11	<25 || <25	LCS-8	118%
TRHC$_{6}$ - C$_{10}$	mg/kg	25	Org-016	<25	127666-11	<25 || <25	LCS-8	118%
Benzene	mg/kg	0.2	Org-016	<0.2	127666-11	<0.2 || <0.2	LCS-8	116%
Toluene	mg/kg	0.5	Org-016	<0.5	127666-11	<0.5 || <0.5	LCS-8	117%
Ethylbenzene	mg/kg	1	Org-016	<1	127666-11	<1 || <1	LCS-8	120%
m+p-xylene	mg/kg	2	Org-016	<2	127666-11	<2 || <2	LCS-8	119%
o-Xylene	mg/kg	1	Org-016	<1	127666-11	<1 || <1	LCS-8	117%
naphthalene	mg/kg	1	Org-014	<1	127666-11	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	104	127666-11	101 || 99 || RPD: 2	LCS-8	108%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			11/05/2015	127666-11	11/05/2015 || 11/05/2015	LCS-8	11/05/2015
Date analysed	-			12/05/2015	127666-11	12/05/2015 || 12/05/2015	LCS-8	12/05/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	50	Org-003	<50	127666-11	<50 || <50	LCS-8	95%
TRHC$_{15}$ - C$_{28}$	mg/kg	100	Org-003	<100	127666-11	<100 || <100	LCS-8	98%
TRHC$_{29}$ - C$_{36}$	mg/kg	100	Org-003	<100	127666-11	<100 || <100	LCS-8	101%
TRH>C$_{10}$-C$_{16}$	mg/kg	50	Org-003	<50	127666-11	<50 || <50	LCS-8	95%
TRH>C$_{16}$-C$_{34}$	mg/kg	100	Org-003	<100	127666-11	<100 || <100	LCS-8	98%
TRH>C$_{34}$-C$_{40}$	mg/kg	100	Org-003	<100	127666-11	<100 || <100	LCS-8	101%
Surrogate o-Terphenyl	%		Org-003	70	127666-11	87 || 82 || RPD: 6	LCS-8	80%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			11/05/2015	127666-11	11/05/2015 || 11/05/2015	LCS-8	11/05/2015
Date analysed	-			11/05/2015	127666-11	11/05/2015 || 11/05/2015	LCS-8	11/05/2015
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	127666-11	<0.1 || <0.1	LCS-8	96%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	127666-11	<0.1 || <0.1	LCS-8	89%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	127666-11	0.3 || 0.2 || RPD: 40	LCS-8	98%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	127666-11	0.6 || 0.5 || RPD: 18	LCS-8	98%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	127666-11	0.6 || 0.5 || RPD: 18	LCS-8	102%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	127666-11	0.2 || 0.2 || RPD: 0	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	127666-11	0.2 || 0.2 || RPD: 0	LCS-8	94%
Benzo(b,j+k) fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	127666-11	0.4 || 0.5 || RPD: 22	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	127666-11	0.3 || 0.3 || RPD: 0	LCS-8	108%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	127666-11	0.2 || 0.2 || RPD: 0	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	127666-11	0.2 || 0.2 || RPD: 0	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	99	127666-11	88 || 105 || RPD: 18	LCS-8	101%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			11/05/2015	127666-11	11/05/2015 || 11/05/2015	LCS-8	11/05/2015
Date analysed	-			12/05/2015	127666-11	12/05/2015 || 12/05/2015	LCS-8	12/05/2015
HCB	mg/kg	0.1	Org-005	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	127666-11	<0.1 || <0.1	LCS-8	104%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	127666-11	<0.1 || <0.1	LCS-8	100%
Heptachlor	mg/kg	0.1	Org-005	<0.1	127666-11	<0.1 || <0.1	LCS-8	97%
delta-BHC	mg/kg	0.1	Org-005	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	127666-11	<0.1 || <0.1	LCS-8	101%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	127666-11	<0.1 || <0.1	LCS-8	104%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	127666-11	<0.1 || <0.1	LCS-8	109%
Dieldrin	mg/kg	0.1	Org-005	<0.1	127666-11	<0.1 || <0.1	LCS-8	104%
Endrin	mg/kg	0.1	Org-005	<0.1	127666-11	<0.1 || <0.1	LCS-8	107%
pp-DDD	mg/kg	0.1	Org-005	<0.1	127666-11	<0.1 || <0.1	LCS-8	119%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	127666-11	<0.1 || <0.1	LCS-8	110%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-005	99	127666-11	105 || 103 || RPD: 2	LCS-8	102%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			11/05/2015	127666-11	11/05/2015 || 11/05/2015	LCS-8	11/05/2015
Date analysed	-			12/05/2015	127666-11	12/05/2015 || 12/05/2015	LCS-8	12/05/2015
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	127666-11	<0.1 || <0.1	LCS-8	104%
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	127666-11	<0.1 || <0.1	LCS-8	113%
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
Diazinon	mg/kg	0.1	Org-008	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	127666-11	<0.1 || <0.1	LCS-8	81%
Dimethoate	mg/kg	0.1	Org-008	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	127666-11	<0.1 || <0.1	LCS-8	100%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	127666-11	<0.1 || <0.1	LCS-8	96%
Malathion	mg/kg	0.1	Org-008	<0.1	127666-11	<0.1 || <0.1	LCS-8	88%
Parathion	mg/kg	0.1	Org-008	<0.1	127666-11	<0.1 || <0.1	LCS-8	126%
Ronnel	mg/kg	0.1	Org-008	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-008	99	127666-11	105 || 103 || RPD: 2	LCS-8	100%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			11/05/2015	127666-11	11/05/2015 || 11/05/2015	LSC-8	11/05/2015
Date analysed	-			12/05/2015	127666-11	12/05/2015 || 12/05/2015	LSC-8	12/05/2015
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	127666-11	<0.1 || <0.1	LSC-8	116%
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	127666-11	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	99	127666-11	105 || 103 || RPD: 2	LSC-8	101%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			11/05/2015	127666-11	11/05/2015 || 11/05/2015	LCS-2	11/05/2015
Date analysed	-			11/05/2015	127666-11	11/05/2015 || 11/05/2015	LCS-2	11/05/2015
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	127666-11	5 || 5 || RPD: 0	LCS-2	100%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	127666-11	<0.4 || <0.4	LCS-2	94%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	127666-11	16 || 15 || RPD: 6	LCS-2	95%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	127666-11	26 || 28 || RPD: 7	LCS-2	95%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	127666-11	39 || 26 || RPD: 40	LCS-2	93%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	127666-11	<0.1 || <0.1	LCS-2	93%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	127666-11	12 || 10 || RPD: 18	LCS-2	93%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	127666-11	52 || 44 || RPD: 17	LCS-2	92%

QUALITY CONTROL Misc Soil - Inorg	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			11/05/2015	127666-11	11/05/2015 || 11/05/2015	LCS-1	11/05/2015
Date analysed	-			11/05/2015	127666-11	11/05/2015 || 11/05/2015	LCS-1	11/05/2015
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	127666-11	<5 || <5	LCS-1	102%

QUALITY CONTROL Misc Inorg - Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			12/05/2015	[NT]	[NT]	LCS-1	12/05/2015
Date analysed	-			14/05/2015	[NT]	[NT]	LCS-1	14/05/2015
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	[NT]	[NT]	LCS-1	101%

QUALITY CONTROL CEC	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			13/05/2015	[NT]	[NT]	LCS-1	13/05/2015
Date analysed	-			13/05/2015	[NT]	[NT]	LCS-1	13/05/2015
Exchangeable Ca	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	LCS-1	95%
Exchangeable K	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	LCS-1	102%
Exchangeable Mg	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	LCS-1	92%

QUALITY CONTROL CEC	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Exchangeable Na	meq/100 g	0.1	Metals-009	<0.1	[NT]	[NT]	LCS-1	116%
Cation Exchange Capacity	meq/100 g	1	Metals-009	<1.0	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	127666-21	11/05/2015 || 11/05/2015	LCS-9	11/05/2015
Date analysed	-	127666-21	13/05/2015 || 13/05/2015	LCS-9	13/05/2015
TRHC$_6$ - C$_9$	mg/kg	127666-21	<25 || <25	LCS-9	113%
TRHC$_6$ - C$_{10}$	mg/kg	127666-21	<25 || <25	LCS-9	113%
Benzene	mg/kg	127666-21	<0.2 || <0.2	LCS-9	112%
Toluene	mg/kg	127666-21	<0.5 || <0.5	LCS-9	113%
Ethylbenzene	mg/kg	127666-21	<1 || <1	LCS-9	114%
m+p-xylene	mg/kg	127666-21	<2 || <2	LCS-9	113%
o-Xylene	mg/kg	127666-21	<1 || <1	LCS-9	112%
naphthalene	mg/kg	127666-21	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%	127666-21	98 || 101 || RPD: 3	LCS-9	104%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	127666-21	11/05/2015 || 11/05/2015	LCS-9	11/05/2015
Date analysed	-	127666-21	13/05/2015 || 13/05/2015	LCS-9	13/05/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	127666-21	<50 || <50	LCS-9	104%
TRHC$_{15}$ - C$_{28}$	mg/kg	127666-21	<100 || <100	LCS-9	112%
TRHC$_{29}$ - C$_{36}$	mg/kg	127666-21	<100 || <100	LCS-9	106%
TRH>C$_{10}$-C$_{16}$	mg/kg	127666-21	<50 || <50	LCS-9	104%
TRH>C$_{16}$-C$_{34}$	mg/kg	127666-21	<100 || <100	LCS-9	112%
TRH>C$_{34}$-C$_{40}$	mg/kg	127666-21	<100 || <100	LCS-9	106%
Surrogate o-Terphenyl	%	127666-21	81 || 81 || RPD: 0	LCS-9	97%

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	127666-21	11/05/2015 || 11/05/2015	LCS-9	11/05/2015
Date analysed	-	127666-21	11/05/2015 || 11/05/2015	LCS-9	11/05/2015
Naphthalene	mg/kg	127666-21	<0.1 || <0.1	LCS-9	97%
Acenaphthylene	mg/kg	127666-21	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	127666-21	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	127666-21	<0.1 || <0.1	LCS-9	100%
Phenanthrene	mg/kg	127666-21	0.8 || 0.4 || RPD: 67	LCS-9	97%
Anthracene	mg/kg	127666-21	0.3 || 0.1 || RPD: 100	[NR]	[NR]
Fluoranthene	mg/kg	127666-21	1.4 || 1.1 || RPD: 24	LCS-9	100%
Pyrene	mg/kg	127666-21	1.4 || 1.1 || RPD: 24	LCS-9	103%

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Benzo(a)anthracene	mg/kg	127666-21	0.7 || 0.6 || RPD: 15	[NR]	[NR]
Chrysene	mg/kg	127666-21	0.7 || 0.5 || RPD: 33	LCS-9	93%
Benzo(b,j+k)fluoranthene	mg/kg	127666-21	1 || 1 || RPD: 0	[NR]	[NR]
Benzo(a)pyrene	mg/kg	127666-21	0.76 || 0.66 || RPD: 14	LCS-9	108%
Indeno(1,2,3-c,d)pyrene	mg/kg	127666-21	0.4 || 0.4 || RPD: 0	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	127666-21	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	127666-21	0.5 || 0.4 || RPD: 22	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	127666-21	97 || 97 || RPD: 0	LCS-9	103%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	127666-30	11/05/2015 || 11/05/2015	127666-12	11/05/2015
Date analysed	-	127666-30	12/05/2015 || 12/05/2015	127666-12	12/05/2015
HCB	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	127666-30	<0.1 || <0.1	127666-12	105%
gamma-BHC	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	127666-30	<0.1 || <0.1	127666-12	100%
Heptachlor	mg/kg	127666-30	<0.1 || <0.1	127666-12	97%
delta-BHC	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	127666-30	<0.1 || <0.1	127666-12	102%
Heptachlor Epoxide	mg/kg	127666-30	<0.1 || <0.1	127666-12	104%
gamma-Chlordane	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	127666-30	<0.1 || <0.1	127666-12	110%
Dieldrin	mg/kg	127666-30	<0.1 || <0.1	127666-12	105%
Endrin	mg/kg	127666-30	<0.1 || <0.1	127666-12	107%
pp-DDD	mg/kg	127666-30	<0.1 || <0.1	127666-12	119%
Endosulfan II	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	127666-30	<0.1 || <0.1	127666-12	109%
Methoxychlor	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%	127666-30	101 || 100 || RPD: 1	127666-12	100%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	127666-30	11/05/2015 || 11/05/2015	127666-12	11/05/2015
Date analysed	-	127666-30	12/05/2015 || 12/05/2015	127666-12	12/05/2015
Azinphos-methyl (Guthion)	mg/kg	127666-30	<0.1 || <0.1	127666-12	95%
Bromophos-ethyl	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	127666-30	<0.1 || <0.1	127666-12	115%
Chlorpyriphos-methyl	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Diazinon	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Dichlorvos	mg/kg	127666-30	<0.1 || <0.1	127666-12	89%
Dimethoate	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	127666-30	<0.1 || <0.1	127666-12	99%
Fenitrothion	mg/kg	127666-30	<0.1 || <0.1	127666-12	93%
Malathion	mg/kg	127666-30	<0.1 || <0.1	127666-12	84%
Parathion	mg/kg	127666-30	<0.1 || <0.1	127666-12	126%
Ronnel	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%	127666-30	101 || 100 || RPD: 1	127666-12	99%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	127666-30	11/05/2015 || 11/05/2015	127666-12	11/05/2015
Date analysed	-	127666-30	12/05/2015 || 12/05/2015	127666-12	12/05/2015
Aroclor 1016	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	127666-30	<0.1 || <0.1	127666-12	119%
Aroclor 1260	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	127666-30	101 || 100 || RPD: 1	127666-12	101%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	127666-21	11/05/2015 || 11/05/2015	127666-12	12/05/2015
Date analysed	-	127666-21	11/05/2015 || 11/05/2015	127666-12	12/05/2015
Arsenic	mg/kg	127666-21	6 || 6 || RPD: 0	127666-12	77%
Cadmium	mg/kg	127666-21	1 || 2 || RPD: 67	127666-12	80%
Chromium	mg/kg	127666-21	16 || 18 || RPD: 12	127666-12	78%
Copper	mg/kg	127666-21	25 || 32 || RPD: 25	127666-12	86%
Lead	mg/kg	127666-21	50 || 52 || RPD: 4	127666-12	75%
Mercury	mg/kg	127666-21	0.1 || 0.2 || RPD: 67	127666-12	93%
Nickel	mg/kg	127666-21	9 || 15 || RPD: 50	127666-12	79%
Zinc	mg/kg	127666-21	62 || 90 || RPD: 37	127666-12	83%

QUALITY CONTROL Misc Soil - Inorg	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	127666-29	11/05/2015 || 11/05/2015	127666-12	11/05/2015
Date analysed	-	127666-29	11/05/2015 || 11/05/2015	127666-12	11/05/2015
Total Phenolics (as Phenol)	mg/kg	127666-29	<5 || <5	127666-12	107%
QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	127666-30	11/05/2015 || 11/05/2015	127666-12	11/05/2015
Date analysed	-	127666-30	13/05/2015 || 13/05/2015	127666-12	13/05/2015
TRHC$_6$ - C$_9$	mg/kg	127666-30	<25 || <25	127666-12	102%
TRHC$_6$ - C$_{10}$	mg/kg	127666-30	<25 || <25	127666-12	102%
Benzene	mg/kg	127666-30	<0.2 || <0.2	127666-12	101%
Toluene	mg/kg	127666-30	<0.5 || <0.5	127666-12	101%
Ethylbenzene	mg/kg	127666-30	<1 || <1	127666-12	103%
m+p-xylene	mg/kg	127666-30	<2 || <2	127666-12	103%
o-Xylene	mg/kg	127666-30	<1 || <1	127666-12	101%
naphthalene	mg/kg	127666-30	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%	127666-30	101 || 99 || RPD: 2	127666-12	100%
QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	127666-30	11/05/2015 || 11/05/2015	127666-12	11/05/2015
Date analysed	-	127666-30	13/05/2015 || 13/05/2015	127666-12	12/05/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	127666-30	<50 || <50	127666-12	101%
TRHC$_{15}$ - C$_{28}$	mg/kg	127666-30	<100 || <100	127666-12	106%
TRHC$_{29}$ - C$_{36}$	mg/kg	127666-30	<100 || <100	127666-12	110%
TRH>C$_{10}$-C$_{16}$	mg/kg	127666-30	<50 || <50	127666-12	101%
TRH>C$_{16}$-C$_{34}$	mg/kg	127666-30	<100 || <100	127666-12	106%
TRH>C$_{34}$-C$_{40}$	mg/kg	127666-30	<100 || <100	127666-12	110%
Surrogate o-Terphenyl	%	127666-30	77 || 79 || RPD: 3	127666-12	95%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	127666-30	11/05/2015 || 11/05/2015	127666-12	11/05/2015
Date analysed	-	127666-30	11/05/2015 || 11/05/2015	127666-12	11/05/2015
Naphthalene	mg/kg	127666-30	<0.1 || <0.1	127666-12	92%
Acenaphthylene	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	127666-30	<0.1 || <0.1	127666-12	96%
Phenanthrene	mg/kg	127666-30	<0.1 || <0.1	127666-12	95%
Anthracene	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	127666-30	<0.1 || <0.1	127666-12	97%
Pyrene	mg/kg	127666-30	<0.1 || <0.1	127666-12	99%
Benzo(a)anthracene	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Chrysene	mg/kg	127666-30	<0.1 || <0.1	127666-12	92%
Benzo(b,j+k)fluoranthene	mg/kg	127666-30	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	127666-30	<0.05 || <0.05	127666-12	105%
Indeno(1,2,3-c,d)pyrene	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	127666-30	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	127666-30	101 || 96 || RPD: 5	127666-12	99%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	127666-30	11/05/2015 || 11/05/2015	LCS-3	11/05/2015
Date analysed	-	127666-30	11/05/2015 || 11/05/2015	LCS-3	11/05/2015
Arsenic	mg/kg	127666-30	<4 || <4	LCS-3	101%
Cadmium	mg/kg	127666-30	<0.4 || <0.4	LCS-3	92%
Chromium	mg/kg	127666-30	85 || 72 || RPD: 17	LCS-3	95%
Copper	mg/kg	127666-30	24 || 25 || RPD: 4	LCS-3	96%
Lead	mg/kg	127666-30	7 || 8 || RPD: 13	LCS-3	91%
Mercury	mg/kg	127666-30	<0.1 || <0.1	LCS-3	94%
Nickel	mg/kg	127666-30	77 || 68 || RPD: 12	LCS-3	92%
Zinc	mg/kg	127666-30	54 || 49 || RPD: 10	LCS-3	91%
QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	127666-40	11/05/2015 || 11/05/2015	127666-41	11/05/2015
Date analysed	-	127666-40	13/05/2015 || 13/05/2015	127666-41	13/05/2015
$TRHC_6$ - C_9	mg/kg	127666-40	<25 || <25	127666-41	107%
$TRHC_6$ - C_{10}	mg/kg	127666-40	<25 || <25	127666-41	107%
Benzene	mg/kg	127666-40	<0.2 || <0.2	127666-41	106%
Toluene	mg/kg	127666-40	<0.5 || <0.5	127666-41	106%
Ethylbenzene	mg/kg	127666-40	<1 || <1	127666-41	107%
m+p-xylene	mg/kg	127666-40	<2 || <2	127666-41	107%
o-Xylene	mg/kg	127666-40	<1 || <1	127666-41	106%
naphthalene	mg/kg	127666-40	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%	127666-40	92 || 101 || RPD: 9	127666-41	99%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	127666-40	11/05/2015 || 11/05/2015	127666-41	11/05/2015
Date analysed	-	127666-40	13/05/2015 || 13/05/2015	127666-41	13/05/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	127666-40	<50 || <50	127666-41	94%
TRHC$_{15}$ - C$_{28}$	mg/kg	127666-40	<100 || <100	127666-41	85%
TRHC$_{29}$ - C$_{36}$	mg/kg	127666-40	120 || <100	127666-41	109%
TRH>C$_{10}$-C$_{16}$	mg/kg	127666-40	<50 || <50	127666-41	94%
TRH>C$_{16}$-C$_{34}$	mg/kg	127666-40	<100 || <100	127666-41	85%
TRH>C$_{34}$-C$_{40}$	mg/kg	127666-40	170 || 150 || RPD: 12	127666-41	109%
Surrogate o-Terphenyl	%	127666-40	80 || 83 || RPD: 4	127666-41	94%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	127666-40	11/05/2015 || 11/05/2015	127666-41	11/05/2015
Date analysed	-	127666-40	11/05/2015 || 11/05/2015	127666-41	11/05/2015
Naphthalene	mg/kg	127666-40	<0.1 || <0.1	127666-41	97%
Acenaphthylene	mg/kg	127666-40	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	127666-40	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	127666-40	<0.1 || <0.1	127666-41	94%
Phenanthrene	mg/kg	127666-40	0.1 || 0.1 || RPD: 0	127666-41	98%
Anthracene	mg/kg	127666-40	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	127666-40	0.3 || 0.4 || RPD: 29	127666-41	97%
Pyrene	mg/kg	127666-40	0.3 || 0.5 || RPD: 50	127666-41	100%
Benzo(a)anthracene	mg/kg	127666-40	0.2 || 0.2 || RPD: 0	[NR]	[NR]
Chrysene	mg/kg	127666-40	0.2 || 0.2 || RPD: 0	127666-41	93%
Benzo(b,j+k)fluoranthene	mg/kg	127666-40	0.4 || 0.4 || RPD: 0	[NR]	[NR]
Benzo(a)pyrene	mg/kg	127666-40	0.2 || 0.3 || RPD: 40	127666-41	104%
Indeno(1,2,3-c,d)pyrene	mg/kg	127666-40	0.1 || 0.2 || RPD: 67	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	127666-40	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	127666-40	0.2 || 0.2 || RPD: 0	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	127666-40	103 || 107 || RPD: 4	127666-41	95%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	127666-40	11/05/2015 || 11/05/2015	127666-22	11/05/2015
Date analysed	-	127666-40	11/05/2015 || 11/05/2015	127666-22	11/05/2015
Arsenic	mg/kg	127666-40	<4 || <4	127666-22	80%
Cadmium	mg/kg	127666-40	<0.4 || <0.4	127666-22	80%
Chromium	mg/kg	127666-40	20 || 18 || RPD: 11	127666-22	78%
Copper	mg/kg	127666-40	20 || 27 || RPD: 30	127666-22	86%
Lead	mg/kg	127666-40	13 || 15 || RPD: 14	127666-22	83%
Mercury	mg/kg	127666-40	<0.1 || <0.1	127666-22	93%
Nickel	mg/kg	127666-40	15 || 10 || RPD: 40	127666-22	78%
Zinc	mg/kg	127666-40	58 || 45 || RPD: 25	127666-22	#

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	127666-1	11/05/2015 || 11/05/2015	LCS-10	11/05/2015
Date analysed	-	127666-1	13/05/2015 || 13/05/2015	LCS-10	13/05/2015
TRHC$_6$ - C$_9$	mg/kg	127666-1	<25 || <25	LCS-10	114%
TRHC$_6$ - C$_{10}$	mg/kg	127666-1	<25 || <25	LCS-10	114%
Benzene	mg/kg	127666-1	<0.2 || <0.2	LCS-10	114%
Toluene	mg/kg	127666-1	<0.5 || <0.5	LCS-10	113%
Ethylbenzene	mg/kg	127666-1	<1 || <1	LCS-10	114%
m+p-xylene	mg/kg	127666-1	<2 || <2	LCS-10	114%
o-Xylene	mg/kg	127666-1	<1 || <1	LCS-10	113%
naphthalene	mg/kg	127666-1	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%	127666-1	101 || 103 || RPD: 2	LCS-10	104%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date extracted	-	127666-1	11/05/2015 || 11/05/2015
Date analysed	-	127666-1	12/05/2015 || 12/05/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	127666-1	<50 || <50
TRHC$_{15}$ - C$_{28}$	mg/kg	127666-1	<100 || <100
TRHC$_{29}$ - C$_{36}$	mg/kg	127666-1	<100 || <100
TRH>C$_{10}$-C$_{16}$	mg/kg	127666-1	<50 || <50
TRH>C$_{16}$-C$_{34}$	mg/kg	127666-1	<100 || <100
TRH>C$_{34}$-C$_{40}$	mg/kg	127666-1	<100 || <100
Surrogate o-Terphenyl	%	127666-1	89 || 83 || RPD: 7

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	LCS-4	11/05/2015
Date analysed	-	[NT]	[NT]	LCS-4	11/05/2015
Arsenic	mg/kg	[NT]	[NT]	LCS-4	100%
Cadmium	mg/kg	[NT]	[NT]	LCS-4	92%
Chromium	mg/kg	[NT]	[NT]	LCS-4	94%
Copper	mg/kg	[NT]	[NT]	LCS-4	96%
Lead	mg/kg	[NT]	[NT]	LCS-4	90%
Mercury	mg/kg	[NT]	[NT]	LCS-4	95%
Nickel	mg/kg	[NT]	[NT]	LCS-4	91%
Zinc	mg/kg	[NT]	[NT]	LCS-4	90%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	127666-41	11/05/2015
Date analysed	-	[NT]	[NT]	127666-41	11/05/2015
Arsenic	mg/kg	[NT]	[NT]	127666-41	78%
Cadmium	mg/kg	[NT]	[NT]	127666-41	77%
Chromium	mg/kg	[NT]	[NT]	127666-41	78%
Copper	mg/kg	[NT]	[NT]	127666-41	90%
Lead	mg/kg	[NT]	[NT]	127666-41	72%
Mercury	mg/kg	[NT]	[NT]	127666-41	93%
Nickel	mg/kg	[NT]	[NT]	127666-41	78%
Zinc	mg/kg	[NT]	[NT]	127666-41	84%

Report Comments:

METALS_S: # Percent recovery is not possible to report due to the inhomogeneous nature of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 127666-21 for Ni. Therefore a triplicate result has been issued as laboratory sample number 127666-46.

PAH_S:The RPD for duplicate results is accepted due to the non homogenous nature of the sample/s.

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.

Asbestos ID was analysed by Approved Identifier: Lulu Guo
Asbestos ID was authorised by Approved Signatory: Lulu Guo

INS: Insufficient sample for this test
NA: Test not required
<: Less than

PQL: Practical Quantitation Limit
RPD: Relative Percent Difference
>: Greater than

NT: Not tested
NA: Test not required
LCS: Laboratory Control Sample

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.

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: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
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.

CHAIN OF CUSTODY

Douglas Partners
Geotechnics | Environment | Groundwater

Client: Douglas Partners	Project Number 84822	To:	Envirolab Services
Contact Person: Veronica Ku	Project Name: Due Diligence Investigation	Contact Person:	Aileen Hie
Project Mgr: P. Gorman	PO No.:	Address:	12 Ashley Street
Sampler: V.K	lab Quote No. :		Chatswood NSW 2068
Address: 96 Hermitage Road West Ryde NSW 2114	Date results required: standard Or choose: standard / same day / 1 day / 2 day / 3 day *Note: Inform lab in advance if urgent turnaround is required - surcharges apply*	Phone:	02 9910 6200
		Fax:	02 9910 6201
		Email:	ahie@envirolab.com.au
Phone: 9809 0666 Mob: 0457 820 847	Report format: esdat / PDF / Excel	Laboratory Report No:	
Email: veronica.ku @douglaspartners.com.au	Comments	Lab Comments:	

Sample Information				Tests Required											Comments
Lab Sample ID	Field Sample ID	Container Type	Type of sample	BTEX	TRH	PAH	As, Cd, Cr, Cu, Pb, Hg, Ni, Zn	OCP, OPP, PCB	Phenols	Asbestos	VOC	pH, CEC			Provide as much information about the sample as you can
1	BD4/300415	glass	Soil	X	X		X								Combo 1m
2	BD2/040515	glass	Soil	X	X		X								Combo 1m
3	BD3/050515	glass	Soil	X	X		X								Combo 1m
4	BD1/060515	glass	Soil	X	X		X								Combo 1m
5	TS/040515	glass	Soil	X											
6	all 4/5/15 TB/040515	glass	Soil	X											
7	TS/050515	glass	Soil	X											
8	TB/050515	glass	Soil	X											
9	TS/060515	glass	Soil	X											
10	TB/060515	glass	Soil	x											
11	BH1/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
12	BH2/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
13	BH2/0.4-0.5	glass	Soil	x	x	x	x				x				Combo 3
14	BH3/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
15	BH3/0.4-0.5	glass	Soil	x	x	x	x				x				Combo 3
16	BH4/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
17	BH4/0.9-1	glass	Soil	x	x	x	x				x				Combo 3
18	BH5/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
19	BH6/0-0.1	glass	Soil	X	X	X	X	X	X	X		x			Combo 8a
20	BH7/0-0.1	glass	Soil	X	X	X	X	X	X	X	x				Combo 8a
21	BH7/0.8-1.0	glass	Soil	x	x	x	x			x					Combo 3a
22	BH7/2.4-2.5	glass	Soil	x	x	x	x			x					Combo 3a
23	BH8/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
24	BH9/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
25	BH9/1.5-1.6	glass	Soil	x	x	x	x			x		x			Combo 3a
26	BH9/2.4-2.5	glass	Soil	x	x	x	x			x					Combo 3a
27	BH9/5.4-5.5	glass	Soil	x	x	x	x			x					Combo 3a

Relinquished by: Douglas Partners	Sample Receipt	*Lab use only:*
Hand delivered / Courier (by whom)	Received by (Company): ELS	Samples Received: Cool or Ambient (circle one)
Condition of Sample at dispatch Cool or Ambient (circle)	Print Name: JYH	Temperature Received at: 12-3 (if applicable)
Temperature (if Applicable):	Date & Time: 8/5/15. 16:00.	Transported by: Hand delivered / courier
Print Name:	Signature:	
Date & Time:		
Signature:		Page_____of ____

ENVIROLAB GROUP

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 127666

Date Received: 8/5/15
Time Received: 16:00
Received by: JYH
Temp: Cool/Ambient 12-3
Cooling: Ice/Icepack
Security: Intact/Broken/None

CHAIN OF CUSTODY

Douglas Partners
Geotechnics / Environment / Groundwater

Client: Douglas Partners	Project Number 84822	To:	Envirolab Services
Contact Person: Veronica Ku	Project Name: Due Diligence Investigation	Contact Person:	Aileen Hie
Project Mgr: P. Gorman	PO No.:	Address:	12 Ashley Street
Sampler: V.K	lab Quote No. :		Chatswood NSW 2068
Address: 96 Hermitage Road West Ryde NSW 2114	Date results required: standard Or choose: standard / same day / 1 day / 2 day / 3 day *Note: Inform lab in advance if urgent turnaround is required - surcharges apply*	Phone:	02 9910 6200
		Fax:	02 9910 6201
		Email:	ahie@envirolab.com.au
Phone: 9809 0666 Mob: 0457 820 847	Report format: esdat / PDF / Excel	Laboratory Report No:	
Email: veronica.ku @douglaspartners.com.au	Comments	Lab Comments:	

127666

Sample information				Tests Required											Comments
Lab Sample ID	Field Sample ID	Container Type	Type of sample	BTEX	TRH	PAH	As, Cd, Cr, Cu, Pb, Hg, Ni, Zn	OCP, OPP, PCB	Phenols	Asbestos	VOC	pH, CEC			Provide as much information about the sample as you can
28	BH10/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
29	BH11/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
30	BH12/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
31	BH12/0.4-0.5	glass	Soil	x	x	x	x								Combo 3
32	BH13/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
33	BH13/0.4-0.5	glass	Soil	x	x	x	x			x	x				Combo 3a
34	BH14/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
35	BH14/0.7-0.8	glass	Soil	x	x	x	x			x					Combo 3a
36	BH14/1.4-1.5	glass	Soil	x	x	x	x			x					Combo 3a
37	BH15/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
38	BH15/0.3-0.4	glass	Soil	x	x	x	x			x					Combo 3a
39	BH15/1.4-1.5	glass	Soil	x	x	x	x								Combo 3
40	BH16/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
41	BH17/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
42	BH18/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
43	BH19/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
44	BH19/0.5-0.6	glass	Soil	x	x	x	x					x			Combo 3
45	BH20/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a

Relinquished by: Douglas Partners	Sample Receipt	*Lab use only:*
Hand delivered / Courier (by whom)	Received by (Company): ELS	Samples Received: Cool or Ambient (circle one)
Condition of Sample at dispatch Cool or Ambient (circle)	Print Name: JYH	Temperature Received at: (if applicable)
Temperature (if Applicable):	Date & Time: 8/5/15 16:00	Transported by: Hand delivered / courier
Print Name:	Signature:	
Date & Time:		
Signature:		

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 128067

Client:
Douglas Partners Pty Ltd
96 Hermitage Rd
West Ryde
NSW 2114

Attention: Veronica Ku, Paul Gorman

Sample log in details:

Your Reference:	**84822, Due Diligence Investigation**
No. of samples:	7 waters 1 soil
Date samples received / completed instructions received	15/05/15 / 15/05/15

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: / Issue Date:	22/05/15 / 22/05/15
Date of Preliminary Report:	Not Issued

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

VOCs in water Our Reference: Your Reference Type of sample	UNITS ---------- ----------	128067-1 BH2 Water	128067-2 BH4 Water	128067-3 BH20 Water	128067-4 DW1 Water
Date extracted	-	18/05/2015	18/05/2015	18/05/2015	18/05/2015
Date analysed	-	19/05/2015	19/05/2015	19/05/2015	19/05/2015
Dichlorodifluoromethane	µg/L	<10	<10	<10	<10
Chloromethane	µg/L	<10	<10	<10	<10
Vinyl Chloride	µg/L	<10	<10	<10	<10
Bromomethane	µg/L	<10	<10	<10	<10
Chloroethane	µg/L	<10	<10	<10	<10
Trichlorofluoromethane	µg/L	<10	<10	<10	<10
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1	<1	<1
1,1-dichloroethane	µg/L	<1	<1	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	3	<1
2,2-dichloropropane	µg/L	<1	<1	<1	<1
1,2-dichloroethane	µg/L	<1	<1	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1	<1	<1
1,1-dichloropropene	µg/L	<1	<1	<1	<1
Cyclohexane	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Benzene	µg/L	<1	<1	<1	<1
Dibromomethane	µg/L	<1	<1	<1	<1
1,2-dichloropropane	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	2	<1
Bromodichloromethane	µg/L	<1	<1	<1	<1
trans-1,3-dichloropropene	µg/L	<1	<1	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1
1,3-dichloropropane	µg/L	<1	<1	<1	<1
Dibromochloromethane	µg/L	<1	<1	<1	<1
1,2-dibromoethane	µg/L	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1	<1	<1
Chlorobenzene	µg/L	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1
Bromoform	µg/L	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2
Styrene	µg/L	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1	<1	<1
o-xylene	µg/L	<1	<1	<1	<1
1,2,3-trichloropropane	µg/L	<1	<1	<1	<1
Isopropylbenzene	µg/L	<1	<1	<1	<1

VOCs in water Our Reference: Your Reference Type of sample	UNITS ---------- ----------	128067-1 BH2 Water	128067-2 BH4 Water	128067-3 BH20 Water	128067-4 DW1 Water
Bromobenzene	µg/L	<1	<1	<1	<1
n-propyl benzene	µg/L	<1	<1	<1	<1
2-chlorotoluene	µg/L	<1	<1	<1	<1
4-chlorotoluene	µg/L	<1	<1	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1	<1	<1
Tert-butyl benzene	µg/L	<1	<1	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1	<1	<1
Sec-butyl benzene	µg/L	<1	<1	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1	<1	<1
4-isopropyl toluene	µg/L	<1	<1	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1	<1	<1
n-butyl benzene	µg/L	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<1	<1	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	119	117	116	116
Surrogate toluene-d8	%	99	97	98	97
Surrogate 4-BFB	%	95	97	99	95

vTRH(C6-C10)/BTEXN in Water Our Reference: Your Reference Type of sample	UNITS ---------- ----------	128067-1 BH2 Water	128067-2 BH4 Water	128067-3 BH20 Water	128067-4 DW1 Water	128067-5 BD1/150515 Water
Date extracted	-	18/05/2015	18/05/2015	18/05/2015	18/05/2015	18/05/2015
Date analysed	-	19/05/2015	19/05/2015	19/05/2015	19/05/2015	19/05/2015
TRHC$_6$ - C$_9$	µg/L	<10	<10	<10	<10	<10
TRHC$_6$ - C$_{10}$	µg/L	<10	<10	<10	<10	<10
TRHC$_6$ - C$_{10}$ less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	119	117	116	116	112
Surrogate toluene-d8	%	99	97	98	97	94
Surrogate 4-BFB	%	95	97	99	95	106

vTRH(C6-C10)/BTEXN in Water Our Reference: Your Reference Type of sample	UNITS ---------- ----------	128067-6 TS1/150515 Water	128067-7 TB1/150515 Water
Date extracted	-	19/05/2015	18/05/2015
Date analysed	-	20/05/2015	19/05/2015
Benzene	µg/L	95%	<1
Toluene	µg/L	99%	<1
Ethylbenzene	µg/L	99%	<1
m+p-xylene	µg/L	100%	<2
o-xylene	µg/L	102%	<1
Surrogate Dibromofluoromethane	%	104	107
Surrogate toluene-d8	%	99	92
Surrogate 4-BFB	%	107	105

svTRH (C10-C40) in Water Our Reference: Your Reference Type of sample	UNITS ---------- ----------	128067-1 BH2 Water	128067-2 BH4 Water	128067-3 BH20 Water	128067-4 DW1 Water	128067-5 BD1/150515 Water
Date extracted	-	18/05/2015	18/05/2015	18/05/2015	18/05/2015	18/05/2015
Date analysed	-	18/05/2015	18/05/2015	18/05/2015	18/05/2015	18/05/2015
TRHC$_{10}$ - C$_{14}$	µg/L	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	µg/L	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	µg/L	<100	<100	<100	<100	<100
TRH>C$_{10}$ - C$_{16}$	µg/L	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	µg/L	<50	<50	<50	<50	<50
TRH>C$_{16}$ - C$_{34}$	µg/L	<100	<100	<100	<100	<100
TRH>C$_{34}$ - C$_{40}$	µg/L	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	107	94	103	82	93

PAHs in Water - Low Level Our Reference: Your Reference Type of sample	UNITS ---------- ----------	128067-1 BH2 Water	128067-2 BH4 Water	128067-3 BH20 Water	128067-4 DW1 Water
Date extracted	-	18/05/2015	18/05/2015	18/05/2015	18/05/2015
Date analysed	-	18/05/2015	18/05/2015	18/05/2015	18/05/2015
Naphthalene	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	103	106	116	85

OCP in water Our Reference: Your Reference Type of sample	UNITS ---------- ----------	128067-1 BH2 Water	128067-2 BH4 Water	128067-3 BH20 Water	128067-4 DW1 Water
Date extracted	-	18/05/2015	18/05/2015	18/05/2015	18/05/2015
Date analysed	-	18/05/2015	18/05/2015	18/05/2015	18/05/2015
HCB	µg/L	<0.2	<0.2	<0.2	<0.2
alpha-BHC	µg/L	<0.2	<0.2	<0.2	<0.2
gamma-BHC	µg/L	<0.2	<0.2	<0.2	<0.2
beta-BHC	µg/L	<0.2	<0.2	<0.2	<0.2
Heptachlor	µg/L	<0.2	<0.2	<0.2	<0.2
delta-BHC	µg/L	<0.2	<0.2	<0.2	<0.2
Aldrin	µg/L	<0.2	<0.2	<0.2	<0.2
Heptachlor Epoxide	µg/L	<0.2	<0.2	<0.2	<0.2
gamma-Chlordane	µg/L	<0.2	<0.2	<0.2	<0.2
alpha-Chlordane	µg/L	<0.2	<0.2	<0.2	<0.2
Endosulfan I	µg/L	<0.2	<0.2	<0.2	<0.2
pp-DDE	µg/L	<0.2	<0.2	<0.2	<0.2
Dieldrin	µg/L	<0.2	<0.2	<0.2	<0.2
Endrin	µg/L	<0.2	<0.2	<0.2	<0.2
pp-DDD	µg/L	<0.2	<0.2	<0.2	<0.2
Endosulfan II	µg/L	<0.2	<0.2	<0.2	<0.2
pp-DDT	µg/L	<0.2	<0.2	<0.2	<0.2
Endrin Aldehyde	µg/L	<0.2	<0.2	<0.2	<0.2
Endosulfan Sulphate	µg/L	<0.2	<0.2	<0.2	<0.2
Methoxychlor	µg/L	<0.2	<0.2	<0.2	<0.2
Surrogate TCMX	%	111	116	111	95

OP Pesticides in water Our Reference: Your Reference Type of sample	UNITS ---------- ----------	128067-1 BH2 Water	128067-2 BH4 Water	128067-3 BH20 Water	128067-4 DW1 Water
Date extracted	-	18/05/2015	18/05/2015	18/05/2015	18/05/2015
Date analysed	-	18/05/2015	18/05/2015	18/05/2015	18/05/2015
Azinphos-methyl (Guthion)	µg/L	<0.2	<0.2	<0.2	<0.2
Bromophos ethyl	µg/L	<0.2	<0.2	<0.2	<0.2
Chlorpyriphos	µg/L	<0.2	<0.2	<0.2	<0.2
Chlorpyriphos-methyl	µg/L	<0.2	<0.2	<0.2	<0.2
Diazinon	µg/L	<0.2	<0.2	<0.2	<0.2
Dichlorovos	µg/L	<0.2	<0.2	<0.2	<0.2
Dimethoate	µg/L	<0.2	<0.2	<0.2	<0.2
Ethion	µg/L	<0.2	<0.2	<0.2	<0.2
Fenitrothion	µg/L	<0.2	<0.2	<0.2	<0.2
Malathion	µg/L	<0.2	<0.2	<0.2	<0.2
Parathion	µg/L	<0.2	<0.2	<0.2	<0.2
Ronnel	µg/L	<0.2	<0.2	<0.2	<0.2
Surrogate TCMX	%	111	116	111	95

PCBs in Water Our Reference: Your Reference Type of sample	UNITS ---------- ----------	128067-1 BH2 Water	128067-2 BH4 Water	128067-3 BH20 Water	128067-4 DW1 Water
Date extracted	-	18/05/2015	18/05/2015	18/05/2015	18/05/2015
Date analysed	-	18/05/2015	18/05/2015	18/05/2015	18/05/2015
Aroclor 1016	µg/L	<2	<2	<2	<2
Aroclor 1221	µg/L	<2	<2	<2	<2
Aroclor 1232	µg/L	<2	<2	<2	<2
Aroclor 1242	µg/L	<2	<2	<2	<2
Aroclor 1248	µg/L	<2	<2	<2	<2
Aroclor 1254	µg/L	<2	<2	<2	<2
Aroclor 1260	µg/L	<2	<2	<2	<2
Surrogate TCLMX	%	111	116	111	95

Total Phenolics in Water					
Our Reference:	UNITS	128067-1	128067-2	128067-3	128067-4
Your Reference	----------	BH2	BH4	BH20	DW1
Type of sample	----------	Water	Water	Water	Water
Date extracted	-	18/05/2015	18/05/2015	18/05/2015	18/05/2015
Date analysed	-	18/05/2015	18/05/2015	18/05/2015	18/05/2015
Total Phenolics (as Phenol)	mg/L	<0.05	<0.05	<0.05	<0.05

HM in water - dissolved Our Reference: Your Reference Type of sample	UNITS ---------- ----------	128067-1 BH2 Water	128067-2 BH4 Water	128067-3 BH20 Water	128067-4 DW1 Water	128067-5 BD1/150515 Water
Date prepared	-	18/05/2015	18/05/2015	18/05/2015	18/05/2015	18/05/2015
Date analysed	-	18/05/2015	18/05/2015	18/05/2015	18/05/2015	18/05/2015
Arsenic-Dissolved	µg/L	<1	<1	4	1	4
Cadmium-Dissolved	µg/L	<0.1	<0.1	0.3	<0.1	0.3
Chromium-Dissolved	µg/L	<1	<1	<1	<1	<1
Copper-Dissolved	µg/L	2	1	1	4	<1
Lead-Dissolved	µg/L	<1	<1	<1	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel-Dissolved	µg/L	6	3	2	1	2
Zinc-Dissolved	µg/L	9	14	11	14	7

Cations in water Dissolved Our Reference: Your Reference Type of sample	UNITS ---------- ----------	128067-1 BH2 Water	128067-2 BH4 Water	128067-3 BH20 Water	128067-4 DW1 Water
Date digested	-	18/05/2015	18/05/2015	18/05/2015	18/05/2015
Date analysed	-	18/05/2015	18/05/2015	18/05/2015	18/05/2015
Calcium - Dissolved	mg/L	47	110	76	19
Magnesium - Dissolved	mg/L	240	210	140	11
Hardness	mgCaCO3/L	1,100	1,200	770	93

VOCs in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	128067-8 DS1 soil
Date extracted	-	18/05/2015
Date analysed	-	18/05/2015
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
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

VOCs in soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	128067-8 DS1 soil
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	%	112
Surrogate aaa-Trifluorotoluene	%	115
Surrogate Toluene-d_8	%	99
Surrogate 4-Bromofluorobenzene	%	97

vTRH(C6-C10)/BTEXN in Soil		
Our Reference:	UNITS	128067-8
Your Reference	----------	DS1
Type of sample	----------	soil
Date extracted	-	18/05/2015
Date analysed	-	18/05/2015
TRHC$_6$ - C$_9$	mg/kg	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25
vTPHC$_6$ - 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
Surrogate aaa-Trifluorotoluene	%	115

svTRH (C10-C40) in Soil		
Our Reference:	UNITS	128067-8
Your Reference	----------	DS1
Type of sample	----------	soil
Date extracted	-	18/05/2015
Date analysed	-	18/05/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100
TRHC$_{29}$ - 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
Surrogate o-Terphenyl	%	79

PAHs in Soil Our Reference: Your Reference Type of sample	UNITS ---------- ----------	128067-8 DS1 soil
Date extracted	-	18/05/2015
Date analysed	-	18/05/2015
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	<0.05
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
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
Total Positive PAHs	mg/kg	NIL (+)VE
Surrogate p-Terphenyl-d14	%	100

Organochlorine Pesticides in soil		
Our Reference:	UNITS	128067-8
Your Reference	----------	DS1
Type of sample	----------	soil
Date extracted	-	18/05/2015
Date analysed	-	19/05/2015
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
Surrogate TCMX	%	105

Organophosphorus Pesticides Our Reference: Your Reference Type of sample	UNITS ---------- ----------	 128067-8 DS1 soil
Date extracted	-	18/05/2015
Date analysed	-	19/05/2015
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	%	105

PCBs in Soil		
Our Reference:	UNITS	128067-8
Your Reference	----------	DS1
Type of sample	----------	soil
Date extracted	-	18/05/2015
Date analysed	-	19/05/2015
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
Surrogate TCLMX	%	105

Acid Extractable metals in soil		
Our Reference:	UNITS	128067-8
Your Reference	----------	DS1
Type of sample	----------	soil
Date digested	-	18/05/2015
Date analysed	-	18/05/2015
Arsenic	mg/kg	12
Cadmium	mg/kg	0.4
Chromium	mg/kg	19
Copper	mg/kg	35
Lead	mg/kg	27
Mercury	mg/kg	<0.1
Nickel	mg/kg	16
Zinc	mg/kg	71

Misc Soil - Inorg		
Our Reference:	UNITS	128067-8
Your Reference	----------	DS1
Type of sample	----------	soil
Date prepared	-	18/05/2015
Date analysed	-	18/05/2015
Total Phenolics (as Phenol)	mg/kg	<5

Moisture		
Our Reference:	UNITS	128067-8
Your Reference	----------	DS1
Type of sample	----------	soil
Date prepared	-	18/05/2015
Date analysed	-	19/05/2015
Moisture	%	30

Method ID	Methodology Summary
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.
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-012 subset	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-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	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.
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-022 ICP-MS	Determination of various metals by ICP-MS.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-012 subset	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. 'TEQ 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. 'TEQ 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. 'TEQ 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.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.

QUALITY CONTROL VOCs in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2015	128067-3	18/05/2015 || 19/05/2015	LCS-W1	18/05/2015
Date analysed	-			19/05/2015	128067-3	19/05/2015 || 19/05/2015	LCS-W1	19/05/2015
Dichlorodifluoromethane	µg/L	10	Org-013	<10	128067-3	<10 || <10	[NR]	[NR]
Chloromethane	µg/L	10	Org-013	<10	128067-3	<10 || <10	[NR]	[NR]
Vinyl Chloride	µg/L	10	Org-013	<10	128067-3	<10 || <10	[NR]	[NR]
Bromomethane	µg/L	10	Org-013	<10	128067-3	<10 || <10	[NR]	[NR]
Chloroethane	µg/L	10	Org-013	<10	128067-3	<10 || <10	[NR]	[NR]
Trichlorofluoromethane	µg/L	10	Org-013	<10	128067-3	<10 || <10	[NR]	[NR]
1,1-Dichloroethene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Trans-1,2-dichloroethene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
1,1-dichloroethane	µg/L	1	Org-013	<1	128067-3	<1 || <1	LCS-W1	103%
Cis-1,2-dichloroethene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Bromochloromethane	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Chloroform	µg/L	1	Org-013	<1	128067-3	3 || 3 || RPD: 0	LCS-W1	106%
2,2-dichloropropane	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
1,2-dichloroethane	µg/L	1	Org-013	<1	128067-3	<1 || <1	LCS-W1	101%
1,1,1-trichloroethane	µg/L	1	Org-013	<1	128067-3	<1 || <1	LCS-W1	106%
1,1-dichloropropene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Cyclohexane	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Carbon tetrachloride	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Benzene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Dibromomethane	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
1,2-dichloropropane	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Trichloroethene	µg/L	1	Org-013	<1	128067-3	2 || 2 || RPD: 0	LCS-W1	114%
Bromodichloromethane	µg/L	1	Org-013	<1	128067-3	<1 || <1	LCS-W1	104%
trans-1,3-dichloropropene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
cis-1,3-dichloropropene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
1,1,2-trichloroethane	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Toluene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
1,3-dichloropropane	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Dibromochloromethane	µg/L	1	Org-013	<1	128067-3	<1 || <1	LCS-W1	110%
1,2-dibromoethane	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Tetrachloroethene	µg/L	1	Org-013	<1	128067-3	<1 || <1	LCS-W1	114%
1,1,1,2-tetrachloroethane	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Chlorobenzene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Ethylbenzene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Bromoform	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
m+p-xylene	µg/L	2	Org-013	<2	128067-3	<2 || <2	[NR]	[NR]
Styrene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
1,1,2,2-tetrachloroethane	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
o-xylene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]

QUALITY CONTROL VOCs in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
1,2,3-trichloropropane	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Isopropylbenzene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Bromobenzene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
n-propyl benzene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
2-chlorotoluene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
4-chlorotoluene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
1,3,5-trimethyl benzene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Tert-butyl benzene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
1,2,4-trimethyl benzene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
1,3-dichlorobenzene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Sec-butyl benzene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
1,4-dichlorobenzene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
4-isopropyl toluene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
1,2-dichlorobenzene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
n-butyl benzene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
1,2-dibromo-3-chloropropane	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
1,2,4-trichlorobenzene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Hexachlorobutadiene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
1,2,3-trichlorobenzene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Surrogate Dibromofluoromethane	%		Org-013	110	128067-3	116 || 109 || RPD: 6	LCS-W1	100%
Surrogate toluene-d8	%		Org-013	100	128067-3	98 || 98 || RPD: 0	LCS-W1	101%
Surrogate 4-BFB	%		Org-013	100	128067-3	99 || 103 || RPD: 4	LCS-W1	104%

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			19/05/2015	128067-3	18/05/2015 || 19/05/2015	LCS-W1	18/05/2015
Date analysed	-			20/05/2015	128067-3	19/05/2015 || 19/05/2015	LCS-W1	19/05/2015
TRHC$_6$ - C$_9$	µg/L	10	Org-016	<10	128067-3	<10 || <10	LCS-W1	110%
TRHC$_6$ - C$_{10}$	µg/L	10	Org-016	<10	128067-3	<10 || <10	LCS-W1	110%
Benzene	µg/L	1	Org-016	<1	128067-3	<1 || <1	LCS-W1	105%
Toluene	µg/L	1	Org-016	<1	128067-3	<1 || <1	LCS-W1	109%
Ethylbenzene	µg/L	1	Org-016	<1	128067-3	<1 || <1	LCS-W1	110%
m+p-xylene	µg/L	2	Org-016	<2	128067-3	<2 || <2	LCS-W1	112%
o-xylene	µg/L	1	Org-016	<1	128067-3	<1 || <1	LCS-W1	112%
Naphthalene	µg/L	1	Org-013	<1	128067-3	<1 || <1	[NR]	[NR]
Surrogate Dibromofluoromethane	%		Org-016	104	128067-3	116 || 109 || RPD: 6	LCS-W1	100%
Surrogate toluene-d8	%		Org-016	92	128067-3	98 || 98 || RPD: 0	LCS-W1	101%
Surrogate 4-BFB	%		Org-016	106	128067-3	99 || 103 || RPD: 4	LCS-W1	104%

QUALITY CONTROL svTRH (C10-C40) in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2015	[NT]	[NT]	LCS-W1	18/05/2015
Date analysed	-			18/05/2015	[NT]	[NT]	LCS-W1	18/05/2015
TRHC$_{10}$ - C$_{14}$	µg/L	50	Org-003	<50	[NT]	[NT]	LCS-W1	103%
TRHC$_{15}$ - C$_{28}$	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	97%
TRHC$_{29}$ - C$_{36}$	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	93%
TRH>C$_{10}$ - C$_{16}$	µg/L	50	Org-003	<50	[NT]	[NT]	LCS-W1	103%
TRH>C$_{16}$ - C$_{34}$	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	97%
TRH>C$_{34}$ - C$_{40}$	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	93%
Surrogate o-Terphenyl	%		Org-003	82	[NT]	[NT]	LCS-W1	75%

QUALITY CONTROL PAHs in Water - Low Level	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2015	[NT]	[NT]	LCS-W1	18/05/2015
Date analysed	-			18/05/2015	[NT]	[NT]	LCS-W1	18/05/2015
Naphthalene	µg/L	0.2	Org-012 subset	<0.2	[NT]	[NT]	LCS-W1	78%
Acenaphthylene	µg/L	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	µg/L	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	µg/L	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-W1	74%
Phenanthrene	µg/L	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-W1	77%

QUALITY CONTROL PAHs in Water - Low Level	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Anthracene	µg/L	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	µg/L	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-W1	78%
Pyrene	µg/L	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-W1	79%
Benzo(a)anthracene	µg/L	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	µg/L	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-W1	77%
Benzo(b,j+k) fluoranthene	µg/L	0.2	Org-012 subset	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	µg/L	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-W1	95%
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	µg/L	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	98	[NT]	[NT]	LCS-W1	99%

QUALITY CONTROL OCP in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2015	[NT]	[NT]	LCS-W1	18/05/2015
Date analysed	-			18/05/2015	[NT]	[NT]	LCS-W1	18/05/2015
HCB	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
alpha-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	91%
gamma-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
beta-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	87%
Heptachlor	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	87%
delta-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Aldrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	88%
Heptachlor Epoxide	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	94%
gamma-Chlordane	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
alpha-Chlordane	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Endosulfan I	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
pp-DDE	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	88%
Dieldrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	92%
Endrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	97%
pp-DDD	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	98%
Endosulfan II	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
pp-DDT	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	97%

QUALITY CONTROL OCP in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Methoxychlor	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%		Org-005	103	[NT]	[NT]	LCS-W1	107%
QUALITY CONTROL OP Pesticides in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2015	[NT]	[NT]	LCS-W1	18/05/2015
Date analysed	-			18/05/2015	[NT]	[NT]	LCS-W1	18/05/2015
Azinphos-methyl (Guthion)	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-W1	95%
Bromophos ethyl	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NR]	[NR]
Chlorpyriphos	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-W1	110%
Chlorpyriphos-methyl	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NR]	[NR]
Diazinon	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NR]	[NR]
Dichlorovos	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-W1	117%
Dimethoate	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NR]	[NR]
Ethion	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-W1	99%
Fenitrothion	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-W1	129%
Malathion	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-W1	99%
Parathion	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-W1	119%
Ronnel	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%		Org-008	103	[NT]	[NT]	LCS-W1	129%
QUALITY CONTROL PCBs in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2015	[NT]	[NT]	LCS-W1	18/05/2015
Date analysed	-			18/05/2015	[NT]	[NT]	LCS-W1	18/05/2015
Aroclor 1016	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Aroclor 1221	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Aroclor 1232	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Aroclor 1242	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Aroclor 1248	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Aroclor 1254	µg/L	2	Org-006	<2	[NT]	[NT]	LCS-W1	111%
Aroclor 1260	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-006	103	[NT]	[NT]	LCS-W1	130%

QUALITY CONTROL Total Phenolics in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD
Date extracted	-			18/05/2015	128067-1	18/05/2015 || 18/05/2015
Date analysed	-			18/05/2015	128067-1	18/05/2015 || 18/05/2015
Total Phenolics (as Phenol)	mg/L	0.05	Inorg-031	<0.05	128067-1	<0.05 || <0.05

QUALITY CONTROL HM in water - dissolved	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			18/05/2015	128067-1	18/05/2015 || 18/05/2015	LCS-W1	18/05/2015
Date analysed	-			18/05/2015	128067-1	18/05/2015 || 18/05/2015	LCS-W1	18/05/2015
Arsenic-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	128067-1	<1 || <1	LCS-W1	102%
Cadmium-Dissolved	µg/L	0.1	Metals-022 ICP-MS	<0.1	128067-1	<0.1 || 0.1	LCS-W1	100%
Chromium-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	128067-1	<1 || <1	LCS-W1	100%
Copper-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	128067-1	2 || 2 || RPD: 0	LCS-W1	100%
Lead-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	128067-1	<1 || <1	LCS-W1	102%
Mercury-Dissolved	µg/L	0.05	Metals-021 CV-AAS	<0.05	128067-1	<0.05 || <0.05	LCS-W1	96%
Nickel-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	128067-1	6 || 6 || RPD: 0	LCS-W1	101%
Zinc-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	128067-1	9 || 8 || RPD: 12	LCS-W1	104%

QUALITY CONTROL Cations in water Dissolved	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			18/05/2015	128067-1	18/05/2015 || 18/05/2015	LCS-W3	18/05/2015
Date analysed	-			18/05/2015	128067-1	18/05/2015 || 18/05/2015	LCS-W3	18/05/2015
Calcium - Dissolved	mg/L	0.5	Metals-020 ICP-AES	<0.5	128067-1	47 || 47 || RPD: 0	LCS-W3	111%
Magnesium - Dissolved	mg/L	0.5	Metals-020 ICP-AES	<0.5	128067-1	240 || 240 || RPD: 0	LCS-W3	100%
Hardness	mgCaCO3/L	3		[NT]	128067-1	1100 || 1100 || RPD: 0	[NR]	[NR]
QUALITY CONTROL VOCs in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2015	[NT]	[NT]	LCS-1	18/05/2015
Date analysed	-			18/05/2015	[NT]	[NT]	LCS-1	18/05/2015
Dichlorodifluoromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Chloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Vinyl Chloride	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Bromomethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Chloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Trichlorofluoromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,1-Dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
trans-1,2-dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,1-dichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	108%
cis-1,2-dichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
bromochloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
chloroform	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	114%
2,2-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	105%
1,1,1-trichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	109%
1,1-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Cyclohexane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
carbon tetrachloride	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Benzene	mg/kg	0.2	Org-014	<0.2	[NT]	[NT]	[NR]	[NR]
dibromomethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
trichloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	112%
bromodichloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	105%
trans-1,3-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
cis-1,3-dichloropropene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,1,2-trichloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Toluene	mg/kg	0.5	Org-014	<0.5	[NT]	[NT]	[NR]	[NR]
1,3-dichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
dibromochloromethane	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	111%

QUALITY CONTROL VOCs in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
1,2-dibromoethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
tetrachloroethene	mg/kg	1	Org-014	<1	[NT]	[NT]	LCS-1	123%
1,1,1,2-tetrachloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
chlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Ethylbenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
bromoform	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
m+p-xylene	mg/kg	2	Org-014	<2	[NT]	[NT]	[NR]	[NR]
styrene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
o-Xylene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2,3-trichloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
isopropylbenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
bromobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
n-propyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
2-chlorotoluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
4-chlorotoluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,3,5-trimethyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
tert-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2,4-trimethyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,3-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
sec-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,4-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
4-isopropyl toluene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
n-butyl benzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2-dibromo-3-chloropropane	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2,4-trichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
hexachlorobutadiene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
1,2,3-trichlorobenzene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluorometha	%		Org-014	110	[NT]	[NT]	LCS-1	107%
Surrogate aaa-Trifluorotoluene	%		Org-014	116	[NT]	[NT]	LCS-1	120%
Surrogate Toluene-d_8	%		Org-014	98	[NT]	[NT]	LCS-1	101%
Surrogate 4-Bromofluorobenzene	%		Org-014	97	[NT]	[NT]	LCS-1	103%

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2015	[NT]	[NT]	LCS-1	18/05/2015
Date analysed	-			18/05/2015	[NT]	[NT]	LCS-1	18/05/2015
TRHC$_{6}$ - C$_{9}$	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-1	115%
TRHC$_{6}$ - C$_{10}$	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-1	115%
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	LCS-1	112%
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	LCS-1	114%
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-1	114%
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	LCS-1	117%
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-1	117%
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	116	[NT]	[NT]	LCS-1	120%
QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2015	[NT]	[NT]	LCS-1	18/05/2015
Date analysed	-			18/05/2015	[NT]	[NT]	LCS-1	18/05/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-1	108%
TRHC$_{15}$ - C$_{28}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	104%
TRHC$_{29}$ - C$_{36}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	85%
TRH>C$_{10}$-C$_{16}$	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-1	108%
TRH>C$_{16}$-C$_{34}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	104%
TRH>C$_{34}$-C$_{40}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	85%
Surrogate o-Terphenyl	%		Org-003	72	[NT]	[NT]	LCS-1	85%
QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2015	[NT]	[NT]	LCS-1	18/05/2015
Date analysed	-			18/05/2015	[NT]	[NT]	LCS-1	18/05/2015
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	91%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	101%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	92%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	93%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	97%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	87%
Benzo(b,j+k) fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	[NT]	[NT]	LCS-1	97%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	101	[NT]	[NT]	LCS-1	93%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2015	[NT]	[NT]	LCS-1	18/05/2015
Date analysed	-			19/05/2015	[NT]	[NT]	LCS-1	19/05/2015
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	102%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	94%
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	98%
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	99%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	102%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	101%
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	102%
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	105%
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	108%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	109%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%		Org-005	101	[NT]	[NT]	LCS-1	95%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2015	[NT]	[NT]	LCS-1	18/05/2015
Date analysed	-			19/05/2015	[NT]	[NT]	LCS-1	19/05/2015
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	90%
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	99%
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Diazinon	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	73%
Dimethoate	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	93%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	85%
Malathion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	80%
Parathion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-1	113%
Ronnel	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%		Org-008	101	[NT]	[NT]	LCS-1	95%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2015	[NT]	[NT]	LCS-1	18/05/2015
Date analysed	-			19/05/2015	[NT]	[NT]	LCS-1	19/05/2015
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	LCS-1	121%
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-006	101	[NT]	[NT]	LCS-1	95%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			18/05/2015	[NT]	[NT]	LCS-2	18/05/2015
Date analysed	-			18/05/2015	[NT]	[NT]	LCS-2	18/05/2015
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	LCS-2	108%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	LCS-2	97%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	105%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	104%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	100%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-2	105%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	102%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	103%

QUALITY CONTROL Misc Soil - Inorg	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			18/05/2015	[NT]	[NT]	LCS-1	18/05/2015
Date analysed	-			18/05/2015	[NT]	[NT]	LCS-1	18/05/2015
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	[NT]	[NT]	LCS-1	100%

QUALITY CONTROL HM in water - dissolved	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	128067-2	18/05/2015
Date analysed	-	[NT]	[NT]	128067-2	18/05/2015
Arsenic-Dissolved	µg/L	[NT]	[NT]	[NR]	[NR]
Cadmium-Dissolved	µg/L	[NT]	[NT]	[NR]	[NR]
Chromium-Dissolved	µg/L	[NT]	[NT]	[NR]	[NR]
Copper-Dissolved	µg/L	[NT]	[NT]	[NR]	[NR]
Lead-Dissolved	µg/L	[NT]	[NT]	[NR]	[NR]
Mercury-Dissolved	µg/L	[NT]	[NT]	128067-2	78%
Nickel-Dissolved	µg/L	[NT]	[NT]	[NR]	[NR]
Zinc-Dissolved	µg/L	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL Cations in water Dissolved	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	128067-2	18/05/2015
Date analysed	-	[NT]	[NT]	128067-2	18/05/2015
Calcium - Dissolved	mg/L	[NT]	[NT]	128067-2	#
Magnesium - Dissolved	mg/L	[NT]	[NT]	128067-2	#
Hardness	mgCaCO3/L	[NT]	[NT]	[NR]	[NR]

Report Comments:

128067-4: For the determination of dissolved metals the unpreserved sample was filtered through 0.45um filter at the lab due to the presence of colloids and/or sediment in the supplied HNO3 bottle.

Cation_w: # Percent recovery is not possible to report due to the high concentration of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

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.

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: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
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.

CHAIN OF CUSTODY

Douglas Partners
Geotechnics / Environment / Groundwater

Client: Douglas Partners	Project Number 84822	To:	Envirolab Services
Contact Person: Veronica Ku	Project Name: Due Diligence Investigation	Contact Person:	Aileen Hie
Project Mgr: P. Gorman	PO No.:	Address:	12 Ashley Street
Sampler: R.L.	lab Quote No. :		Chatswood NSW 2068
Address: 96 Hermitage Road West Ryde NSW 2114	Date results required: standard Or choose: standard / same day / 1 day / 2 day / 3 day *Note: Inform lab in advance if urgent turnaround is required - surcharges apply*	Phone:	02 9910 6200
		Fax:	02 9910 6201
		Email:	ahie@envirolab.com.au
Phone: 9809 0666 Mob: 0457 820 847	Report format: esdat / PDF / Excel	Laboratory Report No:	
Email: veronica.ku @douglaspartners.com.au	Comments	Lab Comments:	

Sample information				Tests Required											Comments
Lab Sample ID	Field Sample ID	Container Type	Type of sample	BTEX	TRH	PAH (low level)	As, Cd, Cr, Cu, Pb, Hg, Ni, Zn	OCP, OPP, PCB	Phenols	VOC	hardness	PAH (routine)			Provide as much information about the sample as you can
1	BH2	glass	water	X	X	X	X	X	X	X	X				Combo 8L
2	BH4	glass	water	X	X	X	X	X	X	X	X				Combo 8L
3	BH20	glass	water	X	X	X	X	X	X	X	X				Combo 8L
4	DW1	glass	water	X	X	X	X	X	X	X	X				Combo 8L
5	BD1/150515	glass	water	X	X		X								Combo 1m
6	TS/150515	glass	water	X											
7	TB/150515	glass	water	X											
8	DS1	glass	soil	X	X		X	X	X	X		X			Combo 8

Relinquished by: Douglas Partners	Sample Receipt	*Lab use only:*
Hand delivered / Courier (by whom)	Received by (Company): EVS	Samples Received: Cool or Ambient (circle one)
Condition of Sample at dispatch Cool or Ambient (circle)	Print Name: PT	Temperature Received at: (if applicable)
Temperature (if Applicable):	Date & Time: 15/5/15 17:00	Transported by: Hand delivered / courier
Print Name: R.Lamont	Signature: PT	
Date & Time: 15/5/15		
Signature:		Page_____of ___

ENVIROLAB GROUP

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 128067

Date Received: 15/5/15
Time Received: ~~15~~ 17:00
Received by: PT
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

CERTIFICATE OF ANALYSIS

Work Order	: **ES1521964**	Page	: 1 of 4
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MS VERONICA KU	Contact	: Jenny Bevan
Address	: PO BOX 472 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 1685	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: veronica.ku@douglaspartners.com.au	E-mail	: jenny.bevan@alsglobal.com
Telephone	: +61 02 9809 0666	Telephone	: 07 3552 8657
Facsimile	: +61 02 9809 4095	Facsimile	: +61-2-8784 8500
Project	: 84822 Due Dilligence Investigation	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 14-May-2015 15:15
C-O-C number	: ----	Date Analysis Commenced	: 15-May-2015
Sampler	: VERONICA KU	Issue Date	: 21-May-2015 17:34
Site	: ----		
		No. of samples received	: 2
Quote number	: ----	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Shobhna Chandra	Metals Coordinator	Sydney Inorganics

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.

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.

- **EP071: Result of sample BD2/040515 has been confirmed by re-extraction and re-analysis.**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BD2/040515	BD1/060515	----	----	----
			Client sampling date / time	[04-May-2015]	[06-May-2015]	----	----	----
Compound	CAS Number	LOR	Unit	ES1521964-001	ES1521964-002	--------	--------	--------
				Result	Result	Result	Result	Result
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1	%	12.1	15.3	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	8	10	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg	17	21	----	----	----
Copper	7440-50-8	5	mg/kg	29	22	----	----	----
Lead	7439-92-1	5	mg/kg	20	46	----	----	----
Nickel	7440-02-0	2	mg/kg	8	4	----	----	----
Zinc	7440-66-6	5	mg/kg	108	37	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	----	----	----
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	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	----	----	----
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	100	<100	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	120	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	220	<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	----	----	----
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	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	----	----	----
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BD2/040515	BD1/060515	----	----	----
				Client sampling date / time	[04-May-2015]	[06-May-2015]	----	----	----
Compound	CAS Number	LOR	Unit		ES1521964-001	ES1521964-002	--------	--------	--------
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**85.0**	**87.4**	----	----	----
Toluene-D8	2037-26-5	0.2	%		**104**	**116**	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		**105**	**112**	----	----	----

CHAIN OF CUSTODY

Douglas Partners
Geotechnics / Environment / Groundwater

Client: Douglas Partners	Project Number 84822	To:	Envirolab Services
Contact Person: Veronica Ku	Project Name: Due Diligence Investigation	Contact Person:	Aileen Hie
Project Mgr: P. Gorman	PO No.:	Address:	12 Ashley Street
Sampler: V.K	lab Quote No. :		Chatswood NSW 2068
Address: 96 Hermitage Road	Date results required: standard	Phone:	02 9910 6200
West Ryde NSW 2114	Or choose: standard / same day / 1 day / 2 day / 3 day	Fax:	02 9910 6201
	Note: Inform lab in advance if urgent turnaround is required - surcharges apply	Email:	ahie@envirolab.com.au
Phone: 9809 0666 Mob: 0457 820 847	Report format: esdat / PDF / Excel	Laboratory Report No:	
Email: veronica.ku @douglaspartners.com.au	Comments	Lab Comments:	

Sample Information				Tests Required											Comments
Lab Sample ID	Field Sample ID	Container Type	Type of sample	BTEX	TRH	PAH	As, Cd, Cr, Cu, Pb, Hg, Ni, Zn	OCP, OPP, PCB	Phenols	Asbestos	VOC	pH, CEC			Provide as much information about the sample as you can
1	BD4/300415	glass	Soil	X	X		X								Combo 1m
2 1	BD2/040515	glass	Soil	X	X		X								Combo 1m
3	BD3/050515	glass	Soil	X	X		X								Combo 1m
4 2	BD1/060515	glass	Soil	X	X		X								Combo 1m
5	TS/040515	glass	Soil	X											
6	TB/040515	glass	Soil	X											
7	TS/050515	glass	Soil	X											
8	TB/050515	glass	Soil	X											
9	TS/060515	glass	Soil	X											
10	TB/060515	glass	Soil	x											
11	BH1/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
12	BH2/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
13	BH2/0.4-0.5	glass	Soil	x	x	x	x				x				Combo 3
14	BH3/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
15	BH3/0.4-0.5	glass	Soil	x	x	x	x				x				Combo 3
16	BH4/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
17	BH4/0.9-1	glass	Soil	x	x	x	x				x				Combo 3
18	BH5/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
19	BH6/0-0.1	glass	Soil	X	X	X	X	X	X	X		x			Combo 8a
20	BH7/0-0.1	glass	Soil	X	X	X	X	X	X	X	x				Combo 8a
21	BH7/0.8-1.0	glass	Soil	x	x	x	x			x					Combo 3a
22	BH7/2.4-2.5	glass	Soil	x	x	x	x			x					Combo 3a
23	BH8/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
24	BH9/0-0.1	glass	Soil	X	X	X	X	X	X	X					Combo 8a
25	BH9/1.5-1.6	glass	Soil	x	x	x	x			x		x			Combo 3a
26	BH9/2.4-2.5	glass	Soil	x	x	x	x			x					Combo 3a
27	BH9/5.4-5.5	glass	Soil	x	x	x	x			x					Combo 3a

all 4/5/15

Relinquished by: Douglas Partners	ELS	Sample Receipt	*Lab use only:*
Hand delivered / Courier (by whom)		Received by (Company): ELS	Samples Received: Cool or Ambient (circle one)
Condition of Sample at dispatch Cool or Ambient (circle)		Print Name: JYH	Temperature Received at: 12-3 (if applicable)
Temperature (if Applicable):		Date & Time: 8/5/15. 16:00.	Transported by: Hand delivered / courier
Print Name:	JYH	Signature:	
Date & Time:	14/5/15 1200		
Signature:			Page____of___

Frank ALS
14/5/15 1515

ALS

Environmental Division
Sydney
Work Order Reference
ES1521964

Telephone : +61-2-8784 8555

QUALITY CONTROL REPORT

Work Order	: **ES1521964**	Page	: 1 of 6
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MS VERONICA KU	Contact	: Jenny Bevan
Address	: PO BOX 472 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 1685	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: veronica.ku@douglaspartners.com.au	E-mail	: jenny.bevan@alsglobal.com
Telephone	: +61 02 9809 0666	Telephone	: 07 3552 8657
Facsimile	: +61 02 9809 4095	Facsimile	: +61-2-8784 8500
Project	: 84822 Due Dilligence Investigation	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 14-May-2015
C-O-C number	: ----	Date Analysis Commenced	: 15-May-2015
Sampler	: VERONICA KU	Issue Date	: 21-May-2015
Site	: ----	No. of samples received	: 2
Quote number	: ----	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

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

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

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

Signatories	*Position*	*Accreditation Category*
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Shobhna Chandra	Metals Coordinator	Sydney Inorganics

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 (%)*
EA055: Moisture Content (QC Lot: 102113)									
ES1521951-017	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	11.7	12.7	8.17	0% - 50%
ES1521961-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	21.0	19.9	5.73	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 103148)									
ES1521964-001	BD2/040515	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	17	15	9.75	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	8	7	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	6	32.2	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	29	28	3.62	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	20	20	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	108	95	12.3	0% - 20%
ES1521866-024	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	30	30	0.00	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	23	22	6.29	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	8	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	42	40	5.36	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	19	18	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	39	38	3.47	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 103149)									
ES1522140-035	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1521866-024	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 100228)									
ES1521956-006	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 100273)									
ES1521866-012	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
ES1521866-022	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 Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 100228)									
ES1521956-006	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: 100273)									
ES1521866-012	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	>C10_C16	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: 100273) - continued									
ES1521866-022	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	>C10_C16	50	mg/kg	<50	<50	0.00	No Limit
EP080: BTEXN (QC Lot: 100228)									
ES1521956-006	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	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: Toluene	108-88-3	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

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 Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 103148)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	108	92	130
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	97.4	87	121
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	119	80	136
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	121	93	127
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	100	86	124
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	110	93	131
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	104	81	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 103149)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	95.5	70	105
EP080/071: Total Petroleum Hydrocarbons (QCLot: 100228)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	97.2	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 100273)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	112	71	131
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	250 mg/kg	116	74	138
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	110	64	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 100228)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	95.5	68	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 100273)								
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	111	70	130
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	114	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	200 mg/kg	99.1	63	131
EP080: BTEXN (QCLot: 100228)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	94.3	62	116
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	90.7	58	118
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	93.6	60	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	91.0	62	138
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	97.3	60	120
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	96.0	62	128

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				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: 103148)							
ES1521866-025	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	108	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	94.3	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	115	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	125	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	90.6	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	96.2	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	# Not Determined	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 103149)							
ES1521866-024	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	110	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 100228)							
ES1521956-006	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	107	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 100273)							
ES1521866-012	Anonymous	EP071: C10 - C14 Fraction	----	523 mg/kg	92.9	73	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	105	53	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	126	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 100228)							
ES1521956-006	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	101	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 100273)							
ES1521866-012	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	860 mg/kg	99.3	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	119	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	112	52	132
EP080: BTEXN (QCLot: 100228)							
ES1521956-006	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	88.7	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	92.4	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	93.0	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	95.6	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	94.0	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	94.7	70	130

QA/QC Compliance Assessment for DQO Reporting

Work Order	: **ES1521964**	Page	: 1 of 4
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MS VERONICA KU	Telephone	: 07 3552 8657
Project	: 84822 Due Dilligence Investigation	Date Samples Received	: 14-May-2015
Site	: ----	Issue Date	: 21-May-2015
Sampler	: VERONICA KU	No. of samples received	: 2
Order number	: ----	No. of samples analysed	: 2

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

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

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

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

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG005T: Total Metals by ICP-AES	ES1521866--025	Anonymous	**Zinc**	7440-66-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Analysis Holding Time Compliance

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

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

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

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055-103) BD2/040515	**04-May-2015**	**----**	----	----	**18-May-2015**	18-May-2015	✓
Soil Glass Jar - Unpreserved (EA055-103) BD1/060515	**06-May-2015**	**----**	----	----	**18-May-2015**	20-May-2015	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) BD2/040515	**04-May-2015**	**19-May-2015**	31-Oct-2015	✓	**20-May-2015**	31-Oct-2015	✓
Soil Glass Jar - Unpreserved (EG005T) BD1/060515	**06-May-2015**	**19-May-2015**	02-Nov-2015	✓	**20-May-2015**	02-Nov-2015	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) BD2/040515	**04-May-2015**	**19-May-2015**	01-Jun-2015	✓	**20-May-2015**	01-Jun-2015	✓
Soil Glass Jar - Unpreserved (EG035T) BD1/060515	**06-May-2015**	**19-May-2015**	03-Jun-2015	✓	**20-May-2015**	03-Jun-2015	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP071) BD2/040515	**04-May-2015**	**15-May-2015**	18-May-2015	✓	**15-May-2015**	24-Jun-2015	✓
Soil Glass Jar - Unpreserved (EP071) BD1/060515	**06-May-2015**	**15-May-2015**	20-May-2015	✓	**15-May-2015**	24-Jun-2015	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) BD2/040515	**04-May-2015**	**15-May-2015**	18-May-2015	✓	**18-May-2015**	18-May-2015	✓
Soil Glass Jar - Unpreserved (EP080) BD1/060515	**06-May-2015**	**15-May-2015**	20-May-2015	✓	**18-May-2015**	20-May-2015	✓

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	EA055-103	2	20	**10.00**	**10.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	12	**16.67**	**10.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	19	**10.53**	**10.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	2	20	**10.00**	**10.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	1	10	**10.00**	**10.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	12	**8.33**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	19	**5.26**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	1	20	**5.00**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	1	10	**10.00**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	12	**8.33**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	19	**5.26**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	1	20	**5.00**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	1	10	**10.00**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	12	**8.33**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	19	**5.26**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH - Semivolatile Fraction	EP071	1	20	**5.00**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TRH Volatiles/BTEX	EP080	1	10	**10.00**	**5.00**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	In-house. A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
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)
TRH - Semivolatile Fraction	EP071	SOIL	(USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40.
TRH Volatiles/BTEX	EP080	SOIL	(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.

Preparation Methods	Method	Matrix	Method Descriptions
Methanolic Extraction of Soils for Purge and Trap	* ORG16	SOIL	(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.

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CERTIFICATE OF ANALYSIS 240597

Client Details

Client	Douglas Partners Pty Ltd
Attention	Paul Gorman
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**84822.03, Eastern Creek**
Number of Samples	19 WATER
Date samples received	08/04/2020
Date completed instructions received	08/04/2020

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	17/04/2020
Date of Issue	17/04/2020

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Results Approved By
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Hannah Nguyen, Senior Chemist
Josh Williams, Senior Chemist
Priya Samarawickrama, Senior Chemist
Steven Luong, Organics Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

VOCs in water						
Our Reference	UNITS	240597-1	240597-2	240597-3	240597-4	240597-5
Your Reference		ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Date analysed	-	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Dichlorodifluoromethane	µg/L	<10	<10	<10	<10	<10
Chloromethane	µg/L	<10	<10	<10	<10	<10
Vinyl Chloride	µg/L	<10	<10	<10	<10	<10
Bromomethane	µg/L	<10	<10	<10	<10	<10
Chloroethane	µg/L	<10	<10	<10	<10	<10
Trichlorofluoromethane	µg/L	<10	<10	<10	<10	<10
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
1,1-dichloroethane	µg/L	<1	<1	<1	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	12	2	4	<1
2,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
1,2-dichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-dichloropropene	µg/L	<1	<1	<1	<1	<1
Cyclohexane	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Benzene	µg/L	<1	<1	<1	<1	<1
Dibromomethane	µg/L	<1	<1	<1	<1	<1
1,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<1	3	<1	<1	<1
trans-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
1,3-dichloropropane	µg/L	<1	<1	<1	<1	<1
Dibromochloromethane	µg/L	<1	1	<1	<1	<1
1,2-dibromoethane	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1

VOCs in water						
Our Reference		240597-1	240597-2	240597-3	240597-4	240597-5
Your Reference	UNITS	ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Bromoform	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
Styrene	µg/L	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
o-xylene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichloropropane	µg/L	<1	<1	<1	<1	<1
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1
Bromobenzene	µg/L	<1	<1	<1	<1	<1
n-propyl benzene	µg/L	<1	<1	<1	<1	<1
2-chlorotoluene	µg/L	<1	<1	<1	<1	<1
4-chlorotoluene	µg/L	<1	<1	<1	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
Tert-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
Sec-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
4-isopropyl toluene	µg/L	<1	<1	<1	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
n-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	110	108	100	110	113
Surrogate toluene-d8	%	102	111	100	100	107
Surrogate 4-BFB	%	101	105	107	96	106

VOCs in water						
Our Reference		240597-6	240597-7	240597-8	240597-9	240597-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Date analysed	-	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Dichlorodifluoromethane	µg/L	<10	<10	<10	<10	<10
Chloromethane	µg/L	<10	<10	<10	<10	<10
Vinyl Chloride	µg/L	<10	<10	<10	<10	<10
Bromomethane	µg/L	<10	<10	<10	<10	<10
Chloroethane	µg/L	<10	<10	<10	<10	<10
Trichlorofluoromethane	µg/L	<10	<10	<10	<10	<10
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
1,1-dichloroethane	µg/L	<1	<1	<1	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1
2,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
1,2-dichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-dichloropropene	µg/L	<1	<1	<1	<1	<1
Cyclohexane	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Benzene	µg/L	<1	<1	<1	<1	<1
Dibromomethane	µg/L	<1	<1	<1	<1	<1
1,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<1	<1	<1	<1	<1
trans-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
1,3-dichloropropane	µg/L	<1	<1	<1	<1	<1
Dibromochloromethane	µg/L	<1	<1	<1	<1	<1
1,2-dibromoethane	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1

VOCs in water						
Our Reference		240597-6	240597-7	240597-8	240597-9	240597-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Bromoform	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
Styrene	µg/L	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
o-xylene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichloropropane	µg/L	<1	<1	<1	<1	<1
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1
Bromobenzene	µg/L	<1	<1	<1	<1	<1
n-propyl benzene	µg/L	<1	<1	<1	<1	<1
2-chlorotoluene	µg/L	<1	<1	<1	<1	<1
4-chlorotoluene	µg/L	<1	<1	<1	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
Tert-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
Sec-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
4-isopropyl toluene	µg/L	<1	<1	<1	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
n-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	118	108	110	121	112
Surrogate toluene-d8	%	104	101	99	111	109
Surrogate 4-BFB	%	99	101	115	101	103

VOCs in water						
Our Reference	UNITS	240597-11	240597-12	240597-13	240597-14	240597-15
Your Reference		SW02	SW03	SW04	SW05	SW06
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Date analysed	-	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Dichlorodifluoromethane	µg/L	<10	<10	<10	<10	<10
Chloromethane	µg/L	<10	<10	<10	<10	<10
Vinyl Chloride	µg/L	<10	<10	<10	<10	<10
Bromomethane	µg/L	<10	<10	<10	<10	<10
Chloroethane	µg/L	<10	<10	<10	<10	<10
Trichlorofluoromethane	µg/L	<10	<10	<10	<10	<10
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
1,1-dichloroethane	µg/L	<1	<1	<1	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1
2,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
1,2-dichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-dichloropropene	µg/L	<1	<1	<1	<1	<1
Cyclohexane	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Benzene	µg/L	<1	<1	<1	<1	<1
Dibromomethane	µg/L	<1	<1	<1	<1	<1
1,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<1	<1	<1	<1	<1
trans-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
1,3-dichloropropane	µg/L	<1	<1	<1	<1	<1
Dibromochloromethane	µg/L	<1	<1	<1	<1	<1
1,2-dibromoethane	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1

VOCs in water						
Our Reference		240597-11	240597-12	240597-13	240597-14	240597-15
Your Reference	UNITS	SW02	SW03	SW04	SW05	SW06
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Bromoform	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
Styrene	µg/L	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
o-xylene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichloropropane	µg/L	<1	<1	<1	<1	<1
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1
Bromobenzene	µg/L	<1	<1	<1	<1	<1
n-propyl benzene	µg/L	<1	<1	<1	<1	<1
2-chlorotoluene	µg/L	<1	<1	<1	<1	<1
4-chlorotoluene	µg/L	<1	<1	<1	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
Tert-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
Sec-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
4-isopropyl toluene	µg/L	<1	<1	<1	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
n-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	124	109	95	112	109
Surrogate toluene-d8	%	101	106	94	103	102
Surrogate 4-BFB	%	110	105	90	108	105

VOCs in water		
Our Reference		240597-19
Your Reference	UNITS	ABH08
Date Sampled		07/04/2020
Type of sample		WATER
Date extracted	-	09/04/2020
Date analysed	-	09/04/2020
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	5
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

VOCs in water		
Our Reference		240597-19
Your Reference	UNITS	ABH08
Date Sampled		07/04/2020
Type of sample		WATER
Bromoform	µg/L	<1
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	%	108
Surrogate toluene-d8	%	103
Surrogate 4-BFB	%	101

vTRH(C6-C10)/BTEXN in Water						
Our Reference		240597-1	240597-2	240597-3	240597-4	240597-5
Your Reference	UNITS	ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Date analysed	-	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
TRH C_6 - C_9	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10}	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	110	108	100	110	113
Surrogate toluene-d8	%	102	111	100	100	107
Surrogate 4-BFB	%	101	105	107	96	106

vTRH(C6-C10)/BTEXN in Water						
Our Reference		240597-6	240597-7	240597-8	240597-9	240597-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Date analysed	-	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
TRH C_6 - C_9	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10}	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	118	108	110	121	112
Surrogate toluene-d8	%	104	101	99	111	109
Surrogate 4-BFB	%	99	101	115	101	103

vTRH(C6-C10)/BTEXN in Water						
Our Reference		240597-11	240597-12	240597-13	240597-14	240597-15
Your Reference	UNITS	SW02	SW03	SW04	SW05	SW06
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Date analysed	-	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
TRH C_6 - C_9	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10}	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	124	109	95	112	109
Surrogate toluene-d8	%	101	106	94	103	102
Surrogate 4-BFB	%	110	105	90	108	105

vTRH(C6-C10)/BTEXN in Water					
Our Reference		240597-16	240597-17	240597-18	240597-19
Your Reference	UNITS	BD1/20200307	TRIP BLANK	TRIP SPIKE	ABH08
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER
Date extracted	-	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Date analysed	-	09/04/2020	09/04/2020	09/04/2020	09/04/2020
TRH C_6 - C_9	µg/L	<10	<10	[NA]	<10
TRH C_6 - C_{10}	µg/L	<10	<10	[NA]	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	[NA]	<10
Benzene	µg/L	<1	<1	118%	<1
Toluene	µg/L	<1	<1	115%	<1
Ethylbenzene	µg/L	<1	<1	108%	<1
m+p-xylene	µg/L	<2	<2	101%	<2
o-xylene	µg/L	<1	<1	106%	<1
Naphthalene	µg/L	<1	<1	[NA]	<1
Surrogate Dibromofluoromethane	%	107	108	103	108
Surrogate toluene-d8	%	99	101	104	103
Surrogate 4-BFB	%	113	102	100	101

svTRH (C10-C40) in Water						
Our Reference		240597-1	240597-2	240597-3	240597-4	240597-5
Your Reference	UNITS	ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
TRH C_{10} - C_{14}	µg/L	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100	<100	<100	<100
TRH >C_{10} - C_{16}	µg/L	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50	<50	<50	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100	<100	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	104	112	105	118	120

svTRH (C10-C40) in Water						
Our Reference		240597-6	240597-7	240597-8	240597-9	240597-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
TRH C_{10} - C_{14}	µg/L	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100	<100	<100	<100
TRH >C_{10} - C_{16}	µg/L	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50	<50	<50	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100	<100	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	97	124	115	116	106

svTRH (C10-C40) in Water						
Our Reference		240597-11	240597-12	240597-13	240597-14	240597-15
Your Reference	UNITS	SW02	SW03	SW04	SW05	SW06
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
TRH C_{10} - C_{14}	µg/L	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100	<100	<100	<100
TRH >C_{10} - C_{16}	µg/L	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50	<50	<50	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100	<100	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	123	114	115	101	96

svTRH (C10-C40) in Water			
Our Reference		240597-16	240597-19
Your Reference	UNITS	BD1/20200307	ABH08
Date Sampled		07/04/2020	07/04/2020
Type of sample		WATER	WATER
Date extracted	-	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020
TRH C_{10} - C_{14}	µg/L	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100
TRH >C_{10} - C_{16}	µg/L	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100
Surrogate o-Terphenyl	%	91	108

PAHs in Water - Low Level						
Our Reference		240597-1	240597-2	240597-3	240597-4	240597-5
Your Reference	UNITS	ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Naphthalene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d14	%	99	88	98	91	81

PAHs in Water - Low Level						
Our Reference		240597-6	240597-7	240597-8	240597-9	240597-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Naphthalene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d14	%	92	88	94	86	94

PAHs in Water - Low Level						
Our Reference		240597-11	240597-12	240597-13	240597-14	240597-15
Your Reference	UNITS	SW02	SW03	SW04	SW05	SW06
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Naphthalene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d14	%	81	93	100	89	84

PAHs in Water - Low Level			
Our Reference		240597-16	240597-19
Your Reference	UNITS	BD1/20200307	ABH08
Date Sampled		07/04/2020	07/04/2020
Type of sample		WATER	WATER
Date extracted	-	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020
Naphthalene	µg/L	<0.2	<0.2
Acenaphthylene	µg/L	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5
Total +ve PAH's	µg/L	<0.1	<0.1
Surrogate p-Terphenyl-d14	%	79	96

Organochlorine Pesticides in Water						
Our Reference		240597-1	240597-2	240597-3	240597-4	240597-5
Your Reference	UNITS	ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
alpha-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
HCB	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
beta-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
gamma-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Heptachlor	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
delta-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Aldrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Heptachlor Epoxide	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
gamma-Chlordane	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
alpha-Chlordane	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan I	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDE	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Dieldrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan II	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDD	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin Aldehyde	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDT	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan Sulphate	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate TCMX	%	92	82	92	92	82

Organochlorine Pesticides in Water						
Our Reference		240597-6	240597-7	240597-8	240597-9	240597-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
alpha-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
HCB	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
beta-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
gamma-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Heptachlor	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
delta-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Aldrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Heptachlor Epoxide	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
gamma-Chlordane	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
alpha-Chlordane	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan I	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDE	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Dieldrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan II	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDD	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin Aldehyde	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDT	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan Sulphate	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate TCMX	%	93	85	93	86	89

Organochlorine Pesticides in Water						
Our Reference		240597-11	240597-12	240597-13	240597-14	240597-15
Your Reference	UNITS	SW02	SW03	SW04	SW05	SW06
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
alpha-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
HCB	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
beta-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
gamma-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Heptachlor	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
delta-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Aldrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Heptachlor Epoxide	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
gamma-Chlordane	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
alpha-Chlordane	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan I	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDE	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Dieldrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan II	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDD	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin Aldehyde	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDT	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan Sulphate	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate TCMX	%	78	91	100	86	85

Organochlorine Pesticides in Water		
Our Reference		240597-19
Your Reference	UNITS	ABH08
Date Sampled		07/04/2020
Type of sample		WATER
Date extracted	-	14/04/2020
Date analysed	-	14/04/2020
alpha-BHC	µg/L	<0.2
HCB	µg/L	<0.2
beta-BHC	µg/L	<0.2
gamma-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
Endosulfan II	µg/L	<0.2
pp-DDD	µg/L	<0.2
Endrin Aldehyde	µg/L	<0.2
pp-DDT	µg/L	<0.2
Endosulfan Sulphate	µg/L	<0.2
Methoxychlor	µg/L	<0.2
Surrogate TCMX	%	92

OP Pesticides in Water						
Our Reference		240597-1	240597-2	240597-3	240597-4	240597-5
Your Reference	UNITS	ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Dichlorvos	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Diazinon	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyriphos-methyl	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Ronnel	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Fenitrothion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyriphos	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos ethyl	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Ethion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate TCMX	%	92	82	92	92	82

OP Pesticides in Water						
Our Reference		240597-6	240597-7	240597-8	240597-9	240597-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Dichlorvos	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Diazinon	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyriphos-methyl	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Ronnel	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Fenitrothion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyriphos	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos ethyl	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Ethion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate TCMX	%	93	85	93	86	89

OP Pesticides in Water						
Our Reference		240597-11	240597-12	240597-13	240597-14	240597-15
Your Reference	UNITS	SW02	SW03	SW04	SW05	SW06
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Dichlorvos	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Diazinon	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyriphos-methyl	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Ronnel	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Fenitrothion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyriphos	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos ethyl	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Ethion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate TCMX	%	78	91	100	86	85

OP Pesticides in Water		
Our Reference		240597-19
Your Reference	UNITS	ABH08
Date Sampled		07/04/2020
Type of sample		WATER
Date extracted	-	14/04/2020
Date analysed	-	14/04/2020
Dichlorvos	µg/L	<0.2
Dimethoate	µg/L	<0.2
Diazinon	µg/L	<0.2
Chlorpyriphos-methyl	µg/L	<0.2
Ronnel	µg/L	<0.2
Fenitrothion	µg/L	<0.2
Malathion	µg/L	<0.2
Chlorpyriphos	µg/L	<0.2
Parathion	µg/L	<0.2
Bromophos ethyl	µg/L	<0.2
Ethion	µg/L	<0.2
Azinphos-methyl (Guthion)	µg/L	<0.2
Surrogate TCMX	%	92

PCBs in Water						
Our Reference		240597-1	240597-2	240597-3	240597-4	240597-5
Your Reference	UNITS	ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Aroclor 1016	µg/L	<2	<2	<2	<2	<2
Aroclor 1221	µg/L	<2	<2	<2	<2	<2
Aroclor 1232	µg/L	<2	<2	<2	<2	<2
Aroclor 1242	µg/L	<2	<2	<2	<2	<2
Aroclor 1248	µg/L	<2	<2	<2	<2	<2
Aroclor 1254	µg/L	<2	<2	<2	<2	<2
Aroclor 1260	µg/L	<2	<2	<2	<2	<2
Surrogate TCMX	%	92	82	92	92	82

PCBs in Water						
Our Reference		240597-6	240597-7	240597-8	240597-9	240597-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Aroclor 1016	µg/L	<2	<2	<2	<2	<2
Aroclor 1221	µg/L	<2	<2	<2	<2	<2
Aroclor 1232	µg/L	<2	<2	<2	<2	<2
Aroclor 1242	µg/L	<2	<2	<2	<2	<2
Aroclor 1248	µg/L	<2	<2	<2	<2	<2
Aroclor 1254	µg/L	<2	<2	<2	<2	<2
Aroclor 1260	µg/L	<2	<2	<2	<2	<2
Surrogate TCMX	%	93	85	93	86	89

PCBs in Water						
Our Reference		240597-11	240597-12	240597-13	240597-14	240597-15
Your Reference	UNITS	SW02	SW03	SW04	SW05	SW06
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Aroclor 1016	µg/L	<2	<2	<2	<2	<2
Aroclor 1221	µg/L	<2	<2	<2	<2	<2
Aroclor 1232	µg/L	<2	<2	<2	<2	<2
Aroclor 1242	µg/L	<2	<2	<2	<2	<2
Aroclor 1248	µg/L	<2	<2	<2	<2	<2
Aroclor 1254	µg/L	<2	<2	<2	<2	<2
Aroclor 1260	µg/L	<2	<2	<2	<2	<2
Surrogate TCMX	%	78	91	100	86	85

PCBs in Water		
Our Reference		240597-19
Your Reference	UNITS	ABH08
Date Sampled		07/04/2020
Type of sample		WATER
Date extracted	-	14/04/2020
Date analysed	-	14/04/2020
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 TCMX	%	92

Total Phenolics in Water						
Our Reference		240597-1	240597-2	240597-3	240597-4	240597-5
Your Reference	UNITS	ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Date analysed	-	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Total Phenolics (as Phenol)	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Total Phenolics in Water						
Our Reference		240597-6	240597-7	240597-8	240597-9	240597-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Date analysed	-	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Total Phenolics (as Phenol)	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Total Phenolics in Water						
Our Reference		240597-11	240597-12	240597-13	240597-14	240597-15
Your Reference	UNITS	SW02	SW03	SW04	SW05	SW06
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date extracted	-	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Date analysed	-	09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Total Phenolics (as Phenol)	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05

Total Phenolics in Water		
Our Reference		240597-19
Your Reference	UNITS	ABH08
Date Sampled		07/04/2020
Type of sample		WATER
Date extracted	-	09/04/2020
Date analysed	-	09/04/2020
Total Phenolics (as Phenol)	mg/L	<0.05

HM in water - dissolved						
Our Reference		240597-1	240597-2	240597-3	240597-4	240597-5
Your Reference	UNITS	ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Arsenic-Dissolved	µg/L	<1	<1	<1	<1	1
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1	0.3	<0.1
Chromium-Dissolved	µg/L	<1	5	<1	<1	<1
Copper-Dissolved	µg/L	5	3	<1	2	<1
Lead-Dissolved	µg/L	<1	<1	<1	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel-Dissolved	µg/L	2	1	32	7	3
Zinc-Dissolved	µg/L	31	<1	52	6	3
Manganese-Dissolved	µg/L	110	100	9,200	250	2,700

HM in water - dissolved						
Our Reference		240597-6	240597-7	240597-8	240597-9	240597-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Arsenic-Dissolved	µg/L	<1	1	<1	1	1
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	<1	3	<1	<1	<1
Copper-Dissolved	µg/L	3	2	6	1	2
Lead-Dissolved	µg/L	<1	<1	<1	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel-Dissolved	µg/L	3	38	1	24	2
Zinc-Dissolved	µg/L	23	2	7	7	3
Manganese-Dissolved	µg/L	170	100	20	17,000	180

HM in water - dissolved						
Our Reference		240597-11	240597-12	240597-13	240597-14	240597-15
Your Reference	UNITS	SW02	SW03	SW04	SW05	SW06
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Arsenic-Dissolved	µg/L	1	1	1	1	<1
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	<1	<1	<1	<1	<1
Copper-Dissolved	µg/L	<1	2	<1	<1	55
Lead-Dissolved	µg/L	<1	<1	<1	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel-Dissolved	µg/L	1	2	1	1	2
Zinc-Dissolved	µg/L	12	4	3	7	1,400
Manganese-Dissolved	µg/L	350	280	<5	46	87

HM in water - dissolved			
Our Reference		240597-16	240597-19
Your Reference	UNITS	BD1/20200307	ABH08
Date Sampled		07/04/2020	07/04/2020
Type of sample		WATER	WATER
Date prepared	-	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020
Arsenic-Dissolved	µg/L	<1	<1
Cadmium-Dissolved	µg/L	<0.1	<0.1
Chromium-Dissolved	µg/L	<1	1
Copper-Dissolved	µg/L	1	<1
Lead-Dissolved	µg/L	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05
Nickel-Dissolved	µg/L	4	<1
Zinc-Dissolved	µg/L	4	1
Manganese-Dissolved	µg/L	3,000	440

Miscellaneous Inorganics						
Our Reference		240597-1	240597-2	240597-3	240597-4	240597-5
Your Reference	UNITS	ABH01	ABH02	ABH03	BH2	BH4
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date prepared	-	08/04/2020	08/04/2020	08/04/2020	08/04/2020	08/04/2020
Date analysed	-	08/04/2020	08/04/2020	08/04/2020	08/04/2020	08/04/2020
Total Cyanide	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004
Ammonia as N in water	mg/L	0.18	0.67	0.21	0.45	0.045
Chloride, Cl	mg/L	1,500	2,200	4,800	6,400	2,500
Sulphate, SO4	mg/L	380	370	430	540	710
Total Alkalinity as $CaCO_3$	mg/L	410	600	190	1,100	720
pH	pH Units	7.7	8.9	6.6	7.3	7.2

Miscellaneous Inorganics						
Our Reference		240597-6	240597-7	240597-8	240597-9	240597-10
Your Reference	UNITS	BH201	BH204	BH208	BH213	SW01
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date prepared	-	08/04/2020	08/04/2020	08/04/2020	08/04/2020	08/04/2020
Date analysed	-	08/04/2020	08/04/2020	08/04/2020	08/04/2020	08/04/2020
Total Cyanide	mg/L	<0.004	<0.004	<0.004	<0.004	[NA]
Ammonia as N in water	mg/L	0.065	4.1	0.054	0.12	0.073
Total Nitrogen in water	mg/L	[NA]	[NA]	[NA]	[NA]	1.2
Chloride, Cl	mg/L	540	8,000	4,500	2,900	180
Sulphate, SO4	mg/L	140	370	540	690	26
Total Alkalinity as $CaCO_3$	mg/L	420	2,000	640	410	200
pH	pH Units	7.4	7.3	7.2	7.1	7.9
Electrical Conductivity	µS/cm	[NA]	[NA]	[NA]	[NA]	920
Dissolved Oxygen*	mg/L	[NA]	[NA]	[NA]	[NA]	8.8
Turbidity	NTU	[NA]	[NA]	[NA]	[NA]	18

Miscellaneous Inorganics						
Our Reference		240597-11	240597-12	240597-13	240597-14	240597-15
Your Reference	UNITS	SW02	SW03	SW04	SW05	SW06
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date prepared	-	08/04/2020	08/04/2020	08/04/2020	08/04/2020	08/04/2020
Date analysed	-	08/04/2020	08/04/2020	08/04/2020	08/04/2020	08/04/2020
Ammonia as N in water	mg/L	0.68	0.060	0.71	0.22	0.031
Total Nitrogen in water	mg/L	2.2	1.3	2.1	1.6	45
Chloride, Cl	mg/L	76	180	75	77	35
Sulphate, SO4	mg/L	14	28	15	13	17
Total Alkalinity as $CaCO_3$	mg/L	150	190	140	160	44
pH	pH Units	7.5	7.8	7.5	7.6	7.3
Electrical Conductivity	µS/cm	520	940	530	550	590
Dissolved Oxygen*	mg/L	8.5	8.9	8.6	8.5	9.3
Turbidity	NTU	12	14	11	62	2.9

Miscellaneous Inorganics		
Our Reference		240597-19
Your Reference	UNITS	ABH08
Date Sampled		07/04/2020
Type of sample		WATER
Date prepared	-	08/04/2020
Date analysed	-	08/04/2020
Total Cyanide	mg/L	<0.004
Ammonia as N in water	mg/L	<0.005
Chloride, Cl	mg/L	5,700
Sulphate, SO4	mg/L	1,100
Total Alkalinity as $CaCO_3$	mg/L	490
pH	pH Units	7.6

Metals in Waters - Acid extractable						
Our Reference		240597-10	240597-11	240597-12	240597-13	240597-14
Your Reference	UNITS	SW01	SW02	SW03	SW04	SW05
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		WATER	WATER	WATER	WATER	WATER
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Phosphorus - Total	mg/L	0.2	0.3	0.2	0.4	0.6

Metals in Waters - Acid extractable		
Our Reference		240597-15
Your Reference	UNITS	SW06
Date Sampled		07/04/2020
Type of sample		WATER
Date prepared	-	14/04/2020
Date analysed	-	14/04/2020
Phosphorus - Total	mg/L	0.3

Method ID	Methodology Summary
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25°C in accordance with APHA latest edition 2510 and Rayment & Lyons.
Inorg-006	Alkalinity - determined titrimetrically in accordance with APHA latest edition, 2320-B.
Inorg-014	Cyanide - free, total, weak acid dissociable by segmented flow analyser (in line dialysis with colourimetric finish). Solids/Filters and sorbents are extracted in a caustic media prior to analysis. Impingers are pH adjsuted as required prior to analysis. Cyanides amenable to Chlorination - samples are analysed untreated and treated with hyperchlorite to assess the potential for chlorination of cyanide forms. Based on APHA latest edition, 4500-CN_G,H.
Inorg-022	Turbidity - measured nephelometrically using a turbidimeter, in accordance with APHA latest edition, 2130-B.
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-055/062/127	Total Nitrogen - Calculation sum of TKN and oxidised Nitrogen. Alternatively analysed by combustion and chemiluminescence.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a KCl extraction.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
Inorg-112	Dissolved Oxygen using membrane electrode. Note this analysis should ideally be carried out immediately after sampling.
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-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-012/017	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS.
Org-012/017	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.

Method ID	Methodology Summary
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.

QUALITY CONTROL: VOCs in water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	[NT]
Date extracted	-			09/04/2020	3	09/04/2020	09/04/2020		09/04/2020	[NT]
Date analysed	-			09/04/2020	3	09/04/2020	09/04/2020		09/04/2020	[NT]
Dichlorodifluoromethane	µg/L	10	Org-013	<10	3	<10	<10	0	[NT]	[NT]
Chloromethane	µg/L	10	Org-013	<10	3	<10	<10	0	[NT]	[NT]
Vinyl Chloride	µg/L	10	Org-013	<10	3	<10	<10	0	[NT]	[NT]
Bromomethane	µg/L	10	Org-013	<10	3	<10	<10	0	[NT]	[NT]
Chloroethane	µg/L	10	Org-013	<10	3	<10	<10	0	[NT]	[NT]
Trichlorofluoromethane	µg/L	10	Org-013	<10	3	<10	<10	0	[NT]	[NT]
1,1-Dichloroethene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Trans-1,2-dichloroethene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
1,1-dichloroethane	µg/L	1	Org-013	<1	3	<1	<1	0	111	[NT]
Cis-1,2-dichloroethene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Bromochloromethane	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Chloroform	µg/L	1	Org-013	<1	3	2	4	67	120	[NT]
2,2-dichloropropane	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
1,2-dichloroethane	µg/L	1	Org-013	<1	3	<1	<1	0	116	[NT]
1,1,1-trichloroethane	µg/L	1	Org-013	<1	3	<1	<1	0	109	[NT]
1,1-dichloropropene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Cyclohexane	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Carbon tetrachloride	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Benzene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Dibromomethane	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
1,2-dichloropropane	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Trichloroethene	µg/L	1	Org-013	<1	3	<1	<1	0	120	[NT]
Bromodichloromethane	µg/L	1	Org-013	<1	3	<1	<1	0	118	[NT]
trans-1,3-dichloropropene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
cis-1,3-dichloropropene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
1,1,2-trichloroethane	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Toluene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
1,3-dichloropropane	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Dibromochloromethane	µg/L	1	Org-013	<1	3	<1	<1	0	117	[NT]
1,2-dibromoethane	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Tetrachloroethene	µg/L	1	Org-013	<1	3	<1	<1	0	119	[NT]
1,1,1,2-tetrachloroethane	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Chlorobenzene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Ethylbenzene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Bromoform	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
m+p-xylene	µg/L	2	Org-013	<2	3	<2	<2	0	[NT]	[NT]
Styrene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
1,1,2,2-tetrachloroethane	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]

QUALITY CONTROL: VOCs in water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	[NT]
o-xylene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
1,2,3-trichloropropane	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Isopropylbenzene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Bromobenzene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
n-propyl benzene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
2-chlorotoluene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
4-chlorotoluene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
1,3,5-trimethyl benzene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Tert-butyl benzene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
1,2,4-trimethyl benzene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
1,3-dichlorobenzene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Sec-butyl benzene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
1,4-dichlorobenzene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
4-isopropyl toluene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
1,2-dichlorobenzene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
n-butyl benzene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
1,2-dibromo-3-chloropropane	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
1,2,4-trichlorobenzene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Hexachlorobutadiene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
1,2,3-trichlorobenzene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-013	106	3	100	105	5	96	[NT]
Surrogate toluene-d8	%		Org-013	103	3	100	101	1	99	[NT]
Surrogate 4-BFB	%		Org-013	93	3	107	98	9	99	[NT]

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	19	09/04/2020	14/04/2020		[NT]	[NT]
Date analysed	-			[NT]	19	09/04/2020	14/04/2020		[NT]	[NT]
Dichlorodifluoromethane	µg/L	10	Org-013	[NT]	19	<10	<10	0	[NT]	[NT]
Chloromethane	µg/L	10	Org-013	[NT]	19	<10	<10	0	[NT]	[NT]
Vinyl Chloride	µg/L	10	Org-013	[NT]	19	<10	<10	0	[NT]	[NT]
Bromomethane	µg/L	10	Org-013	[NT]	19	<10	<10	0	[NT]	[NT]
Chloroethane	µg/L	10	Org-013	[NT]	19	<10	<10	0	[NT]	[NT]
Trichlorofluoromethane	µg/L	10	Org-013	[NT]	19	<10	<10	0	[NT]	[NT]
1,1-Dichloroethene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Trans-1,2-dichloroethene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
1,1-dichloroethane	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Cis-1,2-dichloroethene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Bromochloromethane	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Chloroform	µg/L	1	Org-013	[NT]	19	5	6	18	[NT]	[NT]
2,2-dichloropropane	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
1,2-dichloroethane	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
1,1,1-trichloroethane	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
1,1-dichloropropene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Cyclohexane	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Carbon tetrachloride	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Benzene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Dibromomethane	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
1,2-dichloropropane	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Trichloroethene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Bromodichloromethane	µg/L	1	Org-013	[NT]	19	<1	1	0	[NT]	[NT]
trans-1,3-dichloropropene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
cis-1,3-dichloropropene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
1,1,2-trichloroethane	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Toluene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
1,3-dichloropropane	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Dibromochloromethane	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
1,2-dibromoethane	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Tetrachloroethene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
1,1,1,2-tetrachloroethane	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Chlorobenzene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Ethylbenzene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Bromoform	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
m+p-xylene	µg/L	2	Org-013	[NT]	19	<2	<2	0	[NT]	[NT]
Styrene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
1,1,2,2-tetrachloroethane	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
o-xylene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
1,2,3-trichloropropane	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Isopropylbenzene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Bromobenzene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
n-propyl benzene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
2-chlorotoluene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
4-chlorotoluene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
1,3,5-trimethyl benzene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Tert-butyl benzene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
1,2,4-trimethyl benzene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
1,3-dichlorobenzene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Sec-butyl benzene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
1,4-dichlorobenzene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
4-isopropyl toluene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
1,2-dichlorobenzene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
n-butyl benzene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
1,2-dibromo-3-chloropropane	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
1,2,4-trichlorobenzene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Hexachlorobutadiene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
1,2,3-trichlorobenzene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-013	[NT]	19	108	105	3	[NT]	[NT]
Surrogate toluene-d8	%		Org-013	[NT]	19	103	103	0	[NT]	[NT]
Surrogate 4-BFB	%		Org-013	[NT]	19	101	100	1	[NT]	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	[NT]
Date extracted	-			09/04/2020	3	09/04/2020	15/04/2020		09/04/2020	[NT]
Date analysed	-			09/04/2020	3	09/04/2020	15/04/2020		09/04/2020	[NT]
TRH C_6 - C_9	µg/L	10	Org-016	<10	3	<10	<10	0	114	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-016	<10	3	<10	<10	0	114	[NT]
Benzene	µg/L	1	Org-016	<1	3	<1	<1	0	118	[NT]
Toluene	µg/L	1	Org-016	<1	3	<1	<1	0	109	[NT]
Ethylbenzene	µg/L	1	Org-016	<1	3	<1	<1	0	111	[NT]
m+p-xylene	µg/L	2	Org-016	<2	3	<2	<2	0	116	[NT]
o-xylene	µg/L	1	Org-016	<1	3	<1	<1	0	110	[NT]
Naphthalene	µg/L	1	Org-013	<1	3	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-016	106	3	100	105	5	96	[NT]
Surrogate toluene-d8	%		Org-016	103	3	100	101	1	99	[NT]
Surrogate 4-BFB	%		Org-016	93	3	107	98	9	99	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	19	09/04/2020	14/04/2020		[NT]	[NT]
Date analysed	-			[NT]	19	09/04/2020	14/04/2020		[NT]	[NT]
TRH C_6 - C_9	µg/L	10	Org-016	[NT]	19	<10	<10	0	[NT]	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-016	[NT]	19	<10	<10	0	[NT]	[NT]
Benzene	µg/L	1	Org-016	[NT]	19	<1	<1	0	[NT]	[NT]
Toluene	µg/L	1	Org-016	[NT]	19	<1	<1	0	[NT]	[NT]
Ethylbenzene	µg/L	1	Org-016	[NT]	19	<1	<1	0	[NT]	[NT]
m+p-xylene	µg/L	2	Org-016	[NT]	19	<2	<2	0	[NT]	[NT]
o-xylene	µg/L	1	Org-016	[NT]	19	<1	<1	0	[NT]	[NT]
Naphthalene	µg/L	1	Org-013	[NT]	19	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-016	[NT]	19	108	105	3	[NT]	[NT]
Surrogate toluene-d8	%		Org-016	[NT]	19	103	103	0	[NT]	[NT]
Surrogate 4-BFB	%		Org-016	[NT]	19	101	100	1	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	240597-2
Date extracted	-			14/04/2020	1	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			15/04/2020	1	15/04/2020	15/04/2020		15/04/2020	15/04/2020
TRH C_{10} - C_{14}	µg/L	50	Org-003	<50	1	<50	<50	0	129	125
TRH C_{15} - C_{28}	µg/L	100	Org-003	<100	1	<100	<100	0	108	100
TRH C_{29} - C_{36}	µg/L	100	Org-003	<100	1	<100	<100	0	103	107
TRH >C_{10} - C_{16}	µg/L	50	Org-003	<50	1	<50	<50	0	129	125
TRH >C_{16} - C_{34}	µg/L	100	Org-003	<100	1	<100	<100	0	108	100
TRH >C_{34} - C_{40}	µg/L	100	Org-003	<100	1	<100	<100	0	103	107
Surrogate o-Terphenyl	%		Org-003	109	1	104	112	7	81	85

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	14/04/2020	14/04/2020		[NT]	[NT]
Date analysed	-			[NT]	11	15/04/2020	15/04/2020		[NT]	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-003	[NT]	11	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-003	[NT]	11	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-003	[NT]	11	<100	<100	0	[NT]	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-003	[NT]	11	<50	<50	0	[NT]	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-003	[NT]	11	<100	<100	0	[NT]	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-003	[NT]	11	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-003	[NT]	11	123	100	21	[NT]	[NT]

QUALITY CONTROL: PAHs in Water - Low Level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	240597-2
Date extracted	-			14/04/2020	1	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			14/04/2020	1	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Naphthalene	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	82	130
Acenaphthylene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluorene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	86	104
Phenanthrene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	80	92
Anthracene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	76	94
Pyrene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	82	100
Benzo(a)anthracene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	92	100
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	86	92
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	91	1	99	92	7	80	86

QUALITY CONTROL: PAHs in Water - Low Level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	14/04/2020	14/04/2020		[NT]	[NT]
Date analysed	-			[NT]	11	14/04/2020	14/04/2020		[NT]	[NT]
Naphthalene	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Acenaphthylene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Fluorene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Anthracene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Pyrene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Chrysene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	[NT]	11	81	80	1	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	240597-2
Date extracted	-			14/04/2020	1	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			14/04/2020	1	14/04/2020	14/04/2020		14/04/2020	14/04/2020
alpha-BHC	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	67	79
HCB	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
beta-BHC	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	66	75
gamma-BHC	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Heptachlor	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	67	81
delta-BHC	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Aldrin	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	73	80
Heptachlor Epoxide	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	71	87
gamma-Chlordane	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
alpha-Chlordane	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Endosulfan I	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
pp-DDE	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	67	82
Dieldrin	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	72	90
Endrin	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	73	79
Endosulfan II	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
pp-DDD	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	75	118
Endrin Aldehyde	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
pp-DDT	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Endosulfan Sulphate	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	73	87
Methoxychlor	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	87	1	92	86	7	77	80

QUALITY CONTROL: Organochlorine Pesticides in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	14/04/2020	14/04/2020		[NT]	[NT]
Date analysed	-			[NT]	11	14/04/2020	14/04/2020		[NT]	[NT]
alpha-BHC	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
HCB	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
beta-BHC	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
gamma-BHC	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Heptachlor	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
delta-BHC	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Aldrin	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Heptachlor Epoxide	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
gamma-Chlordane	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
alpha-Chlordane	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Endosulfan I	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
pp-DDE	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Dieldrin	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Endrin	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Endosulfan II	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
pp-DDD	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Endrin Aldehyde	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
pp-DDT	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Endosulfan Sulphate	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Methoxychlor	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	11	78	77	1	[NT]	[NT]

QUALITY CONTROL: OP Pesticides in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	240597-2
Date extracted	-			14/04/2020	1	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			14/04/2020	1	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Dichlorvos	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	116	73
Dimethoate	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Diazinon	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Chlorpyriphos-methyl	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Ronnel	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	98	104
Fenitrothion	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	84	92
Malathion	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	88	96
Chlorpyriphos	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	98	108
Parathion	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	90	138
Bromophos ethyl	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Ethion	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	88	108
Azinphos-methyl (Guthion)	µg/L	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	87	1	92	86	7	77	80

QUALITY CONTROL: OP Pesticides in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	14/04/2020	14/04/2020		[NT]	[NT]
Date analysed	-			[NT]	11	14/04/2020	14/04/2020		[NT]	[NT]
Dichlorvos	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Dimethoate	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Diazinon	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Chlorpyriphos-methyl	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Ronnel	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Fenitrothion	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Malathion	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Chlorpyriphos	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Parathion	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Bromophos ethyl	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Ethion	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Azinphos-methyl (Guthion)	µg/L	0.2	Org-012/017	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	11	78	77	1	[NT]	[NT]

QUALITY CONTROL: PCBs in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	240597-2
Date extracted	-			14/04/2020	1	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			14/04/2020	1	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Aroclor 1016	µg/L	2	Org-006	<2	1	<2	<2	0	[NT]	[NT]
Aroclor 1221	µg/L	2	Org-006	<2	1	<2	<2	0	[NT]	[NT]
Aroclor 1232	µg/L	2	Org-006	<2	1	<2	<2	0	[NT]	[NT]
Aroclor 1242	µg/L	2	Org-006	<2	1	<2	<2	0	[NT]	[NT]
Aroclor 1248	µg/L	2	Org-006	<2	1	<2	<2	0	[NT]	[NT]
Aroclor 1254	µg/L	2	Org-006	<2	1	<2	<2	0	125	78
Aroclor 1260	µg/L	2	Org-006	<2	1	<2	<2	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	87	1	92	86	7	77	80

QUALITY CONTROL: PCBs in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	14/04/2020	14/04/2020		[NT]	[NT]
Date analysed	-			[NT]	11	14/04/2020	14/04/2020		[NT]	[NT]
Aroclor 1016	µg/L	2	Org-006	[NT]	11	<2	<2	0	[NT]	[NT]
Aroclor 1221	µg/L	2	Org-006	[NT]	11	<2	<2	0	[NT]	[NT]
Aroclor 1232	µg/L	2	Org-006	[NT]	11	<2	<2	0	[NT]	[NT]
Aroclor 1242	µg/L	2	Org-006	[NT]	11	<2	<2	0	[NT]	[NT]
Aroclor 1248	µg/L	2	Org-006	[NT]	11	<2	<2	0	[NT]	[NT]
Aroclor 1254	µg/L	2	Org-006	[NT]	11	<2	<2	0	[NT]	[NT]
Aroclor 1260	µg/L	2	Org-006	[NT]	11	<2	<2	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	[NT]	11	78	77	1	[NT]	[NT]

QUALITY CONTROL: Total Phenolics in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	240597-2
Date extracted	-			09/04/2020	1	09/04/2020	09/04/2020		09/04/2020	09/04/2020
Date analysed	-			09/04/2020	1	09/04/2020	09/04/2020		09/04/2020	09/04/2020
Total Phenolics (as Phenol)	mg/L	0.05	Inorg-031	<0.05	1	<0.05	<0.05	0	102	92

QUALITY CONTROL: Total Phenolics in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	[NT]
Date extracted	-			[NT]	11	09/04/2020	09/04/2020		09/04/2020	[NT]
Date analysed	-			[NT]	11	09/04/2020	09/04/2020		09/04/2020	[NT]
Total Phenolics (as Phenol)	mg/L	0.05	Inorg-031	[NT]	11	<0.05	<0.05	0	102	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	240597-3
Date prepared	-			14/04/2020	1	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			14/04/2020	1	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Arsenic-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	90	99
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	1	<0.1	<0.1	0	97	97
Chromium-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	96	94
Copper-Dissolved	µg/L	1	Metals-022	<1	1	5	6	18	99	82
Lead-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	109	98
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	1	<0.05	<0.05	0	86	93
Nickel-Dissolved	µg/L	1	Metals-022	<1	1	2	2	0	97	89
Zinc-Dissolved	µg/L	1	Metals-022	<1	1	31	33	6	93	94
Manganese-Dissolved	µg/L	5	Metals-022	<5	1	110	120	9	92	#

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	11	14/04/2020	14/04/2020		[NT]	[NT]
Date analysed	-			[NT]	11	14/04/2020	14/04/2020		[NT]	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	[NT]	11	1	1	0	[NT]	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	[NT]	11	<1	<1	0	[NT]	[NT]
Copper-Dissolved	µg/L	1	Metals-022	[NT]	11	<1	<1	0	[NT]	[NT]
Lead-Dissolved	µg/L	1	Metals-022	[NT]	11	<1	<1	0	[NT]	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	[NT]	11	<0.05	<0.05	0	[NT]	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	[NT]	11	1	1	0	[NT]	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	[NT]	11	12	12	0	[NT]	[NT]
Manganese-Dissolved	µg/L	5	Metals-022	[NT]	11	350	320	9	[NT]	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	240597-2
Date prepared	-			08/04/2020	1	08/04/2020	08/04/2020		08/04/2020	08/04/2020
Date analysed	-			08/04/2020	1	08/04/2020	08/04/2020		08/04/2020	08/04/2020
Total Cyanide	mg/L	0.004	Inorg-014	<0.004	1	<0.004	<0.004	0	100	95
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	1	0.18	0.18	0	110	81
Total Nitrogen in water	mg/L	0.1	Inorg-055/062/127	<0.1	10	1.2	1.3	8	96	[NT]
Chloride, Cl	mg/L	1	Inorg-081	<1	1	1500	1500	0	95	#
Sulphate, SO4	mg/L	1	Inorg-081	<1	1	380	390	3	98	123
Total Alkalinity as $CaCO_3$	mg/L	5	Inorg-006	<5	1	410	400	2	107	[NT]
pH	pH Units		Inorg-001	[NT]	1	7.7	7.7	0	101	[NT]
Electrical Conductivity	µS/cm	1	Inorg-002	<1	10	920	[NT]		106	[NT]
Dissolved Oxygen*	mg/L	0.1	Inorg-112	<0.1	10	8.8	[NT]		[NT]	[NT]
Turbidity	NTU	0.1	Inorg-022	<0.1	10	18	18	0	98	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	10	08/04/2020	08/04/2020		[NT]	[NT]
Date analysed	-			[NT]	10	08/04/2020	08/04/2020		[NT]	[NT]
Ammonia as N in water	mg/L	0.005	Inorg-057	[NT]	10	0.073	[NT]		[NT]	[NT]
Chloride, Cl	mg/L	1	Inorg-081	[NT]	10	180	[NT]		[NT]	[NT]
Sulphate, SO4	mg/L	1	Inorg-081	[NT]	10	26	[NT]		[NT]	[NT]
Total Alkalinity as $CaCO_3$	mg/L	5	Inorg-006	[NT]	10	200	[NT]		[NT]	[NT]
pH	pH Units		Inorg-001	[NT]	10	7.9	[NT]		[NT]	[NT]
Total Nitrogen in water	mg/L	0.1	Inorg-055/062/127	[NT]	11	2.2	[NT]		[NT]	[NT]
Electrical Conductivity	µS/cm	1	Inorg-002	[NT]	11	520	530	2	[NT]	[NT]
Dissolved Oxygen*	mg/L	0.1	Inorg-112	[NT]	11	8.5	[NT]		[NT]	[NT]
Turbidity	NTU	0.1	Inorg-022	[NT]	11	12	[NT]		[NT]	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	11	08/04/2020	08/04/2020		[NT]	[NT]
Date analysed	-			[NT]	11	08/04/2020	08/04/2020		[NT]	[NT]
Ammonia as N in water	mg/L	0.005	Inorg-057	[NT]	11	0.68	0.68	0	[NT]	[NT]
Chloride, Cl	mg/L	1	Inorg-081	[NT]	11	76	76	0	[NT]	[NT]
Sulphate, SO4	mg/L	1	Inorg-081	[NT]	11	14	15	7	[NT]	[NT]
Total Alkalinity as $CaCO_3$	mg/L	5	Inorg-006	[NT]	11	150	150	0	[NT]	[NT]
pH	pH Units		Inorg-001	[NT]	11	7.5	7.5	0	[NT]	[NT]

QUALITY CONTROL: Metals in Waters - Acid extractable						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	240597-11
Date prepared	-			14/04/2020	10	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			14/04/2020	10	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Phosphorus - Total	mg/L	0.05	Metals-020	<0.05	10	0.2	0.2	0	97	105

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.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

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 (not SPOCAS); 60-140% for organics/SPOCAS (+/-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.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

MISC_INORG: Cl # Percent recovery is not possible to report due to the high concentration of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

8 HM in water - dissolved - # Percent recovery is not possible to report due to the high concentration of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

Dissolved Metals: no filtered, preserved sample was received for samples #2,4,6,7,8,10,12,13 & 16, therefore the unpreserved sample was filtered through 0.45µm filter at the lab. Note: there is a possibility some elements may be underestimated.

Total metals: no preserved sample was received, therefore analysis was conducted from the unpreserved sample bottle. Note: there is a possibility some elements may be underestimated.

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CHAIN OF CUSTODY DESPATCH SHEET

Project No:	84822.03	**Suburb:**	Eastern Creek	**To:**	Envirolab Services
Project Name:	Eastern Creek	**Order Number**			
Project Manager:	PG	**Sampler:**	JJH/TB	**Attn:**	Aileen Hie
Emails:	paul.gorman@douglaspartners.com.au; joel.james-hall@douglaspartners.com.au			**Phone:**	(02) 9910 6200
Date Required:	Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☑			**Email:**	AHie@envirolab.com.au
Prior Storage:	☑ Esky ☑ Fridge ☐ Shelved	Do samples contain 'potential' HBM?	Yes ☐ No ☑ (If YES, then handle, transport and store in accordance with FPM HAZID)		

Sample ID	Lab ID	Date Sampled	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: Combo 8L	Combo 10L	VOC	Ammonia	Anions	TRH/BTEX	Combo 3L	pH	EC, DO, Turbidity, TN, TP (low)	Notes/preservation
ABH01	1	07/04/20	W	G,P		×	×	×	×			x		Sample date for all bottles should read 07.04.20, some are mislabelled as '7.3.20'
ABH02	2	07/04/20	W	G,P		×	×	×	×			x		
ABH03	3	07/04/20	W	G,P		×	×	×	×			x		
BH2	4	07/04/20	W	G,P		×	×	×	×			x		
BH4	5	07/04/20	W	G,P		×	×	×	×			x		
BH201	6	07/04/20	W	G,P		×	×	×	×			x		
BH204	7	07/04/20	W	G,P		×	×	×	×			x		
BH208	8	07/04/20	W	G,P		×	×	×	×			x		
BH213	9	07/04/20	W	G,P		×	×	×	×			x		
SW01	10	07/04/20	W	G,P	×		×	×	×			x	x	
SW02	11	07/04/20	W	G,P	×		×	×	×			x	x	
SW03	12	07/04/20	W	G,P	×		×	×	×			x	x	
SW04	13	07/04/20	W	G,P	×		×	×	×			x	x	
SW05	14	07/04/20	W	G,P	×		×	×	×			x	x	
SW06	15	07/04/20	W	G,P	×		×	×	×			x	x	
PQL (S) mg/kg												**ANZECC PQLs req'd for all water analytes** ☐		

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 240597
Date Received: 8/4/20
Time Received: 1500
Received By: CN
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here: 8HM plus Manganese

Lab Report/Reference No:

Total number of samples in container: **Relinquished by:** JJH **Transported to laboratory by:** Courier

Send Results to: Douglas Partners Pty Ltd **Address:** 96 Hermitage Road West Ryde NSW 2114 **Phone:** **Fax:**

Signed: **Received by:** **Date & Time:**

Douglas Partners
Geotechnics | Environment | Groundwater

240547

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	84822.03	**Suburb:**	Eastern Creek	**To:**	Envirolab Services
Project Name:	Eastern Creek	**Order Number**			
Project Manager:	PG	**Sampler:**	JJH/TB	**Attn:**	Aileen Hie
Emails:	paul.gorman@douglaspartners.com.au; joel.james-hall@douglaspartners.com.au			**Phone:**	(02) 9910 6200
Date Required:	Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☑			**Email:**	AHie@envirolab.com.au
Prior Storage:	☑ Esky ☑ Fridge ☐ Shelved	Do samples contain 'potential' HBM?	Yes ☐ No ☑	(If YES, then handle, transport and store in accordance with FPM HAZID)	

Sample ID	Lab ID	Sampling Date	Sample Type (S - soil W - water)	Container Type (G - glass P - plastic)	Analytes: Combo 8L	Combo 10L	VOC	Ammonia	Anions	TRH/ BTEX	Combo 3L	pH	EC, DO, Turbidity, TN, TP (low)	Notes/preservation
BD1/20200307	16	07/04/20	W	G,P							x			intra lab duplicate
Trip Blank	17	07/04/20	W	G						x				
Trip Spike	18	07/04/20	W	G						x				
BD2/20200307	-	07/04/20	W	G,P							x			inter lab duplicate
ABH08	19	07/04/20	W	G,P		x	x	x	x			x		
PQL (S) mg/kg														**ANZECC PQLs req'd for all water analytes** ☐

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here: Add manganese

Lab Report/Reference No:

Total number of samples in container: **Relinquished by:** JJH **Transported to laboratory by:** Courier

Send Results to: Douglas Partners Pty Ltd **Address:** 96 Hermitage Road West Ryde NSW 2114 **Phone:** **Fax:**

Signed: **Received by:** **Date & Time:**

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 240796

Client Details

Client	Douglas Partners Pty Ltd
Attention	Joel James-Hall
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**84822.03, Eastern Creek EIS**
Number of Samples	6xCanister, 8xCT
Date samples received	14/04/2020
Date completed instructions received	14/04/2020

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	21/04/2020
Date of Issue	21/04/2020

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Results Approved By
Chris Guo, Senior Chemist, Air
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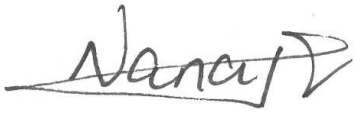
Authorised By



Nancy Zhang, Laboratory Manager

VOC in Carbon tubes		
Our Reference		240796-11
Your Reference	UNITS	IPA - CT
Date Sampled		09/04/2020
Type of sample		Air - CT
Air Kit Security No.		8389215058
Date extracted	-	20/04/2020
Date analysed	-	20/04/2020
Isopropyl Alcohol*	µg/tube	11,000
Surrogate Toluene-d8	%	97
Surrogate 4-Bromofluorobenzene	%	84

VOC in Carbon tubes		
Our Reference		240796-11
Your Reference	UNITS	IPA - CT
Date Sampled		09/04/2020
Type of sample		Air - CT
Air Kit Security No.		8389215058
Date prepared	-	20/04/2020
Date analysed	-	20/04/2020
Tube Sampling rate	mL/min	113
Tube Sampling Time	mins	2.0
Volume sampled	m^3	0.00022600
Isopropyl Alcohol	$\mu g/m^3$	49,000,000

TO15 in Canisters/Bags						
Our Reference		240796-1	240796-3	240796-5	240796-6	240796-8
Your Reference	UNITS	BH208 - Can	BH2 - Can	BH201 - Can	BH4 - Can	BH213 - Can
Date Sampled		09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Type of sample		Air - Canister	Air - Canister	Air - Canister	Air - Canister	Air - Canister
Air Kit Security No.		3517	3520	2558	3289	3282
Vacuum before Shipment	Hg"	-30	-30	-30	-30	-30
Vacuum before Analysis	Hg"	-6	-6	-5	-3	-6
Date prepared	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Propylene	ppbv	<3	<3	<3	<3	<4
Dichlorodifluoromethane	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	ppbv	<1	<1	<0.5	<0.5	<1
1,2-Dichlorotetrafluoroethane	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Butadiene	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Bromomethane	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Ethanol	ppbv	40	20	30	20	30
Acrolein	ppbv	<5	<5	<5	<5	<5
Trichlorofluoromethane (Freon 11)	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	ppbv	10	30	8	8	20
Isopropyl Alcohol	ppbv	10	51	10	10	91
1,1-Dichloroethene	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichlorotrifluoroethane	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Methylene chloride (Dichloromethane)	ppbv	<5	<5	<5	<5	<5
Carbon Disulfide	ppbv	<5	<5	<5	<5	<5
trans-1,2-dichloroethene	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
MTBE	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
1,1- Dichloroethane	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl Acetate	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
MEK	ppbv	<5	<5	<5	<5	<5
Hexane	ppbv	<0.5	<0.5	<0.5	<0.5	2
cis-1,2-Dichloroethene	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Ethyl Acetate	ppbv	0.5	<0.5	<0.5	<0.5	0.9
Chloroform	ppbv	<0.5	<0.5	0.7	1	<0.5
Tetrahydrofuran	ppbv	2	4	4	2	7.4
1,1,1-Trichloroethane	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	ppbv	<0.5	<0.5	<0.5	<0.5	0.5
Carbon tetrachloride	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5

TO15 in Canisters/Bags						
Our Reference		240796-1	240796-3	240796-5	240796-6	240796-8
Your Reference	UNITS	BH208 - Can	BH2 - Can	BH201 - Can	BH4 - Can	BH213 - Can
Date Sampled		09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Type of sample		Air - Canister	Air - Canister	Air - Canister	Air - Canister	Air - Canister
Air Kit Security No.		3517	3520	2558	3289	3282
Cyclohexane	ppbv	<0.5	<0.5	<0.5	<0.5	1
Heptane	ppbv	<0.5	<0.5	<0.5	<0.5	0.9
Trichloroethene	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dioxane	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Methyl Methacrylate	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
MIBK	ppbv	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	ppbv	2	2	2	1	5
1,1,2-Trichloroethane	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Methyl Butyl Ketone	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dibromoethane	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	ppbv	<0.5	0.6	0.5	<0.5	2
m-& p-Xylene	ppbv	1	2	1	1	4
Styrene	ppbv	0.7	0.7	0.5	0.5	0.6
o-Xylene	ppbv	0.5	0.7	0.7	0.6	1
Bromoform	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
4-ethyl toluene	ppbv	<0.5	<0.5	<0.5	<0.5	0.6
1,3,5-Trimethylbenzene	ppbv	<0.5	<0.5	<0.5	<0.5	0.7
1,2,4-Trimethylbenzene	ppbv	0.7	0.8	0.7	0.8	2
1,3-Dichlorobenzene	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Benzyl chloride	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachloro- 1,3-butadiene	ppbv	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate-Bromochloromethane	% rec	115	119	120	114	119
Surrogate -1,4-Difluorobenzene	% rec	98	100	100	99	99
Surrogate-Chlorobenzene-D5	% rec	96	96	96	95	97

TO15 in Canisters/Bags		
Our Reference		240796-12
Your Reference	UNITS	BH204 - Can
Date Sampled		09/04/2020
Type of sample		Air - Canister
Air Kit Security No.		1868
Vacuum before Shipment	Hg"	-30
Vacuum before Analysis	Hg"	-6
Date prepared	-	15/04/2020
Date analysed	-	15/04/2020
Propylene	ppbv	<3
Dichlorodifluoromethane	ppbv	<0.5
Chloromethane	ppbv	<1
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	30
Acrolein	ppbv	<5
Trichlorofluoromethane (Freon 11)	ppbv	<0.5
Acetone	ppbv	10
Isopropyl Alcohol	ppbv	380
1,1-Dichloroethene	ppbv	<0.5
1,1,2-Trichlorotrifluoroethane	ppbv	<0.5
Methylene chloride (Dichloromethane)	ppbv	<5
Carbon Disulfide	ppbv	<5
trans-1,2-dichloroethene	ppbv	<0.5
MTBE	ppbv	<0.5
1,1- Dichloroethane	ppbv	<0.5
Vinyl Acetate	ppbv	<0.5
MEK	ppbv	<5
Hexane	ppbv	<0.5
cis-1,2-Dichloroethene	ppbv	<0.5
Ethyl Acetate	ppbv	<0.5
Chloroform	ppbv	<0.5
Tetrahydrofuran	ppbv	3
1,1,1-Trichloroethane	ppbv	<0.5
1,2-Dichloroethane	ppbv	<0.5
Benzene	ppbv	<0.5
Carbon tetrachloride	ppbv	<0.5

TO15 in Canisters/Bags		
Our Reference		240796-12
Your Reference	UNITS	BH204 - Can
Date Sampled		09/04/2020
Type of sample		Air - Canister
Air Kit Security No.		1868
Cyclohexane	ppbv	<0.5
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	<5
cis-1,3-Dichloropropene	ppbv	<0.5
trans-1,3-Dichloropropene	ppbv	<0.5
Toluene	ppbv	2
1,1,2-Trichloroethane	ppbv	<0.5
Methyl Butyl Ketone	ppbv	<0.5
Dibromochloromethane	ppbv	<0.5
Tetrachloroethene	ppbv	<0.5
1,2-Dibromoethane	ppbv	<0.5
Chlorobenzene	ppbv	<0.5
Ethylbenzene	ppbv	0.5
m-& p-Xylene	ppbv	1
Styrene	ppbv	0.8
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	0.7
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	117
Surrogate -1,4-Difluorobenzene	% rec	98
Surrogate-Chlorobenzene-D5	% rec	95

TO15 in Canisters ug/m3						
Our Reference		240796-1	240796-3	240796-5	240796-6	240796-8
Your Reference	UNITS	BH208 - Can	BH2 - Can	BH201 - Can	BH4 - Can	BH213 - Can
Date Sampled		09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Type of sample		Air - Canister	Air - Canister	Air - Canister	Air - Canister	Air - Canister
Air Kit Security No.		3517	3520	2558	3289	3282
Vacuum before Shipment	Hg"	-30	-30	-30	-30	-30
Vacuum before Analysis	Hg"	-6	-6	-5	-3	-6
Date prepared	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Propylene	µg/m³	<5.4	<5.4	<5.4	<5.4	<7.2
Dichlorodifluoromethane	µg/m³	<2.5	<2.5	<2.5	<2.5	<2.5
Chloromethane	µg/m³	<2	<2	<1	<1	<2
1,2-Dichlorotetrafluoroethane	µg/m³	<2.5	<2.5	<2.5	<2.5	<2.5
Vinyl chloride	µg/m³	<1.3	<1.3	<1.3	<1.3	<1.3
1,3-Butadiene	µg/m³	<1.1	<1.1	<1.1	<1.1	<1.1
Bromomethane	µg/m³	<1.9	<1.9	<1.9	<1.9	<1.9
Chloroethane	µg/m³	<1.3	<1.3	<1.3	<1.3	<1.3
Ethanol	µg/m³	70	40	60	30	50
Acrolein	µg/m³	<11	<11	<11	<11	<11
Trichlorofluoromethane (Freon 11)	µg/m³	<2.8	<2.8	<2.8	<2.8	<2.8
Acetone	µg/m³	30	60	20	20	50
Isopropyl Alcohol	µg/m³	30	120	30	30	220
1,1-Dichloroethene	µg/m³	<2	<2	<2	<2	<2
1,1,2-Trichlorotrifluoroethane	µg/m³	<3.8	<3.8	<3.8	<3.8	<3.8
Methylene chloride (Dichloromethane)	µg/m³	<17	<17	<17	<17	<17
Carbon Disulfide	µg/m³	<16	<16	<16	<16	<16
trans-1,2-dichloroethene	µg/m³	<2	<2	<2	<2	<2
MTBE	µg/m³	<1.8	<1.8	<1.8	<1.8	<1.8
1,1- Dichloroethane	µg/m³	<2	<2	<2	<2	<2
Vinyl Acetate	µg/m³	<1.8	<1.8	<1.8	<1.8	<1.8
MEK	µg/m³	<15	<15	<15	<15	<15
Hexane	µg/m³	<1.8	<1.8	<1.8	<1.8	5
cis-1,2-Dichloroethene	µg/m³	<2	<2	<2	<2	<2
Ethyl Acetate	µg/m³	2	<1.8	<1.8	<1.8	3
Chloroform	µg/m³	<2.4	<2.4	3	7	<2.4
Tetrahydrofuran	µg/m³	6	10	10	6	22
1,1,1-Trichloroethane	µg/m³	<2.7	<2.7	<2.7	<2.7	<2.7
1,2-Dichloroethane	µg/m³	<2	<2	<2	<2	<2
Benzene	µg/m³	<1.6	<1.6	<1.6	<1.6	2
Carbon tetrachloride	µg/m³	<3.1	<3.1	<3.1	<3.1	<3.1

TO15 in Canisters ug/m3						
Our Reference		240796-1	240796-3	240796-5	240796-6	240796-8
Your Reference	UNITS	BH208 - Can	BH2 - Can	BH201 - Can	BH4 - Can	BH213 - Can
Date Sampled		09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Type of sample		Air - Canister	Air - Canister	Air - Canister	Air - Canister	Air - Canister
Air Kit Security No.		3517	3520	2558	3289	3282
Cyclohexane	µg/m³	<1.7	<1.7	<1.7	<1.7	4
Heptane	µg/m³	<2	<2	<2	<2	4
Trichloroethene	µg/m³	<2.7	<2.7	<2.7	<2.7	<2.7
1,2-Dichloropropane	µg/m³	<2.3	<2.3	<2.3	<2.3	<2.3
1,4-Dioxane	µg/m³	<1.8	<1.8	<1.8	<1.8	<1.8
Bromodichloromethane	µg/m³	<3.4	<3.4	<3.4	<3.4	<3.4
Methyl Methacrylate	µg/m³	<2	<2	<2	<2	<2.0
MIBK	µg/m³	<20	<20	<20	<20	<20
cis-1,3-Dichloropropene	µg/m³	<2.3	<2.3	<2.3	<2.3	<2.3
trans-1,3-Dichloropropene	µg/m³	<2.3	<2.3	<2.3	<2.3	<2.3
Toluene	µg/m³	7	9	9	5	20
1,1,2-Trichloroethane	µg/m³	<2.7	<2.7	<2.7	<2.7	<2.7
Methyl Butyl Ketone	µg/m³	<2	<2	<2	<2	<2
Dibromochloromethane	µg/m³	<1.6	<1.6	<1.6	<1.6	<1.6
Tetrachloroethene	µg/m³	<3.4	<3.4	<3.4	<3.4	<3.4
1,2-Dibromoethane	µg/m³	<3.8	<3.8	<3.8	<3.8	<3.8
Chlorobenzene	µg/m³	<2.3	<2.3	<2.3	<2.3	<2.3
Ethylbenzene	µg/m³	<2.2	2	2	<2.2	7
m-& p-Xylene	µg/m³	5	7	6	5	20
Styrene	µg/m³	3	3	2	2	2
o-Xylene	µg/m³	2	3	3	2	6
Bromoform	µg/m³	<5.2	<5.2	<5.2	<5.2	<5.2
1,1,2,2-Tetrachloroethane	µg/m³	<3.4	<3.4	<3.4	<3.4	<3.4
4-ethyl toluene	µg/m³	<2.5	<2.5	<2.5	<2.5	3
1,3,5-Trimethylbenzene	µg/m³	<2.5	<2.5	<2.5	<2.5	3
1,2,4-Trimethylbenzene	µg/m³	4	4	3	4	8
1,3-Dichlorobenzene	µg/m³	<3	<3	<3	<3	<3
Benzyl chloride	µg/m³	<2.6	<2.6	<2.6	<2.6	<2.6
1,4-Dichlorobenzene	µg/m³	<3	<3	<3	<3	<3
1,2-Dichlorobenzene	µg/m³	<3	<3	<3	<3	<3
1,2,4-Trichlorobenzene	µg/m³	<3.7	<3.7	<3.7	<3.7	<3.7
Naphthalene	µg/m³	<2.6	<2.6	<2.6	<2.6	<2.6
Hexachloro- 1,3-butadiene	µg/m³	<5.3	<5.3	<5.3	<5.3	<5.3
Surrogate-Bromochloromethane	% rec	115	119	120	114	119
Surrogate -1,4-Difluorobenzene	% rec	98	100	100	99	99
Surrogate-Chlorobenzene-D5	% rec	96	96	96	95	97

TO15 in Canisters ug/m3		
Our Reference		240796-12
Your Reference	UNITS	BH204 - Can
Date Sampled		09/04/2020
Type of sample		Air - Canister
Air Kit Security No.		1868
Vacuum before Shipment	Hg"	-30
Vacuum before Analysis	Hg"	-6
Date prepared	-	15/04/2020
Date analysed	-	15/04/2020
Propylene	µg/m³	<5.4
Dichlorodifluoromethane	µg/m³	<2.5
Chloromethane	µg/m³	<2
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	60
Acrolein	µg/m³	<11
Trichlorofluoromethane (Freon 11)	µg/m³	<2.8
Acetone	µg/m³	30
Isopropyl Alcohol	µg/m³	920
1,1-Dichloroethene	µg/m³	<2
1,1,2-Trichlorotrifluoroethane	µg/m³	<3.8
Methylene chloride (Dichloromethane)	µg/m³	<17
Carbon Disulfide	µg/m³	<16
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	<15
Hexane	µg/m³	<1.8
cis-1,2-Dichloroethene	µg/m³	<2
Ethyl Acetate	µg/m³	<1.8
Chloroform	µg/m³	<2.4
Tetrahydrofuran	µg/m³	9
1,1,1-Trichloroethane	µg/m³	<2.7
1,2-Dichloroethane	µg/m³	<2
Benzene	µg/m³	<1.6
Carbon tetrachloride	µg/m³	<3.1

TO15 in Canisters ug/m3		
Our Reference		240796-12
Your Reference	UNITS	BH204 - Can
Date Sampled		09/04/2020
Type of sample		Air - Canister
Air Kit Security No.		1868
Cyclohexane	µg/m³	<1.7
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	<20
cis-1,3-Dichloropropene	µg/m³	<2.3
trans-1,3-Dichloropropene	µg/m³	<2.3
Toluene	µg/m³	7
1,1,2-Trichloroethane	µg/m³	<2.7
Methyl Butyl Ketone	µg/m³	<2
Dibromochloromethane	µg/m³	<1.6
Tetrachloroethene	µg/m³	<3.4
1,2-Dibromoethane	µg/m³	<3.8
Chlorobenzene	µg/m³	<2.3
Ethylbenzene	µg/m³	2
m-& p-Xylene	µg/m³	5
Styrene	µg/m³	3
o-Xylene	µg/m³	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	3
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	117
Surrogate -1,4-Difluorobenzene	% rec	98
Surrogate-Chlorobenzene-D5	% rec	95

Permanent Gas analysis						
Our Reference		240796-1	240796-3	240796-5	240796-6	240796-8
Your Reference	UNITS	BH208 - Can	BH2 - Can	BH201 - Can	BH4 - Can	BH213 - Can
Date Sampled		09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Type of sample		Air - Canister	Air - Canister	Air - Canister	Air - Canister	Air - Canister
Air Kit Security No.		3517	3520	2558	3289	3282
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Methane (CH_4)	%	<0.01	<0.01	<0.01	<0.01	<0.01
Carbon Dioxide (CO_2)	%	0.12	0.08	2.2	2.8	0.27
Oxygen (O_2)	%	21	21	19	18	20
Carbon Monoxide (CO)	%	<0.01	<0.01	<0.01	<0.01	<0.01
Hydrogen Sulphide H_2S*	%	<0.1	<0.1	<0.1	<0.1	<0.1

Permanent Gas analysis		
Our Reference		240796-12
Your Reference	UNITS	BH204 - Can
Date Sampled		09/04/2020
Type of sample		Air - Canister
Air Kit Security No.		1868
Date prepared	-	14/04/2020
Date analysed	-	14/04/2020
Methane (CH_4)	%	<0.01
Carbon Dioxide (CO_2)	%	0.09
Oxygen (O_2)	%	20
Carbon Monoxide (CO)	%	<0.01
Hydrogen Sulphide H_2S*	%	<0.1

TPH Air/ Air Phase Hydrocarbon						
Our Reference		240796-1	240796-3	240796-5	240796-6	240796-8
Your Reference	UNITS	BH208 - Can	BH2 - Can	BH201 - Can	BH4 - Can	BH213 - Can
Date Sampled		09/04/2020	09/04/2020	09/04/2020	09/04/2020	09/04/2020
Type of sample		Air - Canister	Air - Canister	Air - Canister	Air - Canister	Air - Canister
Air Kit Security No.		3517	3520	2558	3289	3282
Date prepared	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
TPH C_5 - C_8 Aliphatic	µg/m³	<200	<200	<200	<200	<200
TPH C_9 - C_{12} Aliphatic	µg/m³	<50	<50	<50	<50	<50
TPH C_9 - C_{10} Aromatic	µg/m³	<100	<100	<100	<100	<100
TPH C_6 - C_{10} - BTEX (F1)	µg/m³	<200	<200	<200	<200	<200
TPH >C_{10} - C_{12} - Naphthalene (F2)	µg/m³	<40	<40	<40	<40	<40

TPH Air/ Air Phase Hydrocarbon		
Our Reference		240796-12
Your Reference	UNITS	BH204 - Can
Date Sampled		09/04/2020
Type of sample		Air - Canister
Air Kit Security No.		1868
Date prepared	-	15/04/2020
Date analysed	-	15/04/2020
TPH C_5 - C_8 Aliphatic	µg/m³	<200
TPH C_9 - C_{12} Aliphatic	µg/m³	<50
TPH C_9 - C_{10} Aromatic	µg/m³	<100
TPH C_6 - C_{10} - BTEX (F1)	µg/m³	<200
TPH >C_{10} - C_{12} - Naphthalene (F2)	µg/m³	<40

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
ORG-022	Determination of volatile organic compounds in charcoal tubes/badges/sorbents using CS2 extraction, based on NIOSH methods using GC/GC-MS. Desorption efficiencies are not applied to results in ug/tube. Note where µg/m^3 results are supplied for SKC badges, the factors used are for 575-001, if 575-001 data is unavailable for an analyte then use 575-002 then 575-003 (exposure time must be supplied).
TO15	USEPA TO15 - Analysis of VOC's in air using USEPA TO15 and in house method AT-002. Note, longer term stability of some oxygenated compounds is questionable where significant humidity is present.
USEPA 18	Measurement of Gaseous Organic Compound Emissions by Gas Chromatography using USEPA m18.

QUALITY CONTROL: VOC in Carbon tubes					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			20/04/2020	[NT]	[NT]	[NT]	[NT]	20/04/2020	[NT]
Date analysed	-			20/04/2020	[NT]	[NT]	[NT]	[NT]	20/04/2020	[NT]
Isopropyl Alcohol*	µg/tube	5	ORG-022	<5	[NT]	[NT]	[NT]	[NT]	93	[NT]
Surrogate Toluene-d8	%		ORG-022	84	[NT]	[NT]	[NT]	[NT]	105	[NT]
Surrogate 4-Bromofluorobenzene	%		ORG-022	77	[NT]	[NT]	[NT]	[NT]	110	[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	-6	-6	0	[NT]	[NT]
Date prepared	-			15/04/2020	1	15/04/2020	15/04/2020		15/04/2020	[NT]
Date analysed	-			15/04/2020	1	15/04/2020	15/04/2020		15/04/2020	[NT]
Propylene	ppbv	0.5	TO15	<0.5	1	<3	<3	0	127	[NT]
Dichlorodifluoromethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Chloromethane	ppbv	0.5	TO15	<0.5	1	<1	<1	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	40	40	0	[NT]	[NT]
Acrolein	ppbv	5	TO15	<5	1	<5	<5	0	[NT]	[NT]
Trichlorofluoromethane (Freon 11)	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[NT]
Acetone	ppbv	5	TO15	<5	1	10	10	0	[NT]	[NT]
Isopropyl Alcohol	ppbv	5	TO15	<5	1	10	10	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	5	TO15	<5	1	<5	<5	0	[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	5	TO15	<5	1	<5	<5	0	[NT]	[NT]
Hexane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	118	[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	<0.5	<0.5	0	[NT]	[NT]
Tetrahydrofuran	ppbv	0.5	TO15	<0.5	1	2	2	0	[NT]	[NT]
1,1,1-Trichloroethane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	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	109	[NT]
Heptane	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	120	[NT]

QUALITY CONTROL: TO15 in Canisters/Bags						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Trichloroethene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	[NT]	[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	5	TO15	<5	1	<5	<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	2	2	0	106	[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	<0.5	<0.5	0	[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	109	[NT]
m-& p-Xylene	ppbv	1	TO15	<1	1	1	1	0	103	[NT]
Styrene	ppbv	0.5	TO15	<0.5	1	0.7	0.7	0	100	[NT]
o-Xylene	ppbv	0.5	TO15	<0.5	1	0.5	0.5	0	123	[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	119	[NT]
1,3,5-Trimethylbenzene	ppbv	0.5	TO15	<0.5	1	<0.5	<0.5	0	105	[NT]
1,2,4-Trimethylbenzene	ppbv	0.5	TO15	<0.5	1	0.7	0.7	0	100	[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	102	1	115	120	4	99	[NT]
Surrogate -1,4-Difluorobenzene	% rec		TO15	100	1	98	100	2	98	[NT]
Surrogate-Chlorobenzene-D5	% rec		TO15	96	1	96	97	1	97	[NT]

QUALITY CONTROL: TO15 in Canisters ug/m3						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Vacuum before Shipment	Hg"			[NT]	1	-30	-30	0	[NT]	[NT]
Vacuum before Analysis	Hg"			[NT]	1	-6	-6	0	[NT]	[NT]
Date prepared	-			15/04/2020	1	15/04/2020	15/04/2020		[NT]	[NT]
Date analysed	-			15/04/2020	1	15/04/2020	15/04/2020		[NT]	[NT]
Propylene	µg/m³	0.9	TO15	<0.9	1	<5.4	<5.4	0	[NT]	[NT]
Dichlorodifluoromethane	µg/m³	2.5	TO15	<2.5	1	<2.5	<2.5	0	[NT]	[NT]
Chloromethane	µg/m³	1.0	TO15	<1.0	1	<2	<2	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	70	70	0	[NT]	[NT]
Acrolein	µg/m³	11	TO15	<11	1	<11	<11	0	[NT]	[NT]
Trichlorofluoromethane (Freon 11)	µg/m³	2.8	TO15	<2.8	1	<2.8	<2.8	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	30	30	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	17	USEPA 18	<17	1	<17	<17	0	[NT]	[NT]
Carbon Disulfide	µg/m³	16	TO15	<16	1	<16	<16	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	15	TO15	<15	1	<15	<15	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	2	2	0	[NT]	[NT]
Chloroform	µg/m³	2.4	TO15	<2.4	1	<2.4	<2.4	0	[NT]	[NT]
Tetrahydrofuran	µg/m³	1.5	TO15	<1.5	1	6	6	0	[NT]	[NT]
1,1,1-Trichloroethane	µg/m³	2.7	TO15	<2.7	1	<2.7	<2.7	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]

QUALITY CONTROL: TO15 in Canisters ug/m3						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Trichloroethene	µg/m³	2.7	TO15	<2.7	1	<2.7	<2.7	0	[NT]	[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	20	TO15	<20	1	<20	<20	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	7	7	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	<3.4	<3.4	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	5	5	0	[NT]	[NT]
Styrene	µg/m³	2.1	TO15	<2.1	1	3	3	0	[NT]	[NT]
o-Xylene	µg/m³	2.2	TO15	<2.2	1	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	4	4	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	102	1	115	120	4	[NT]	[NT]
Surrogate -1,4-Difluorobenzene	% rec		TO15	100	1	98	100	2	[NT]	[NT]
Surrogate-Chlorobenzene-D5	% rec		TO15	96	1	96	97	1	[NT]	[NT]

QUALITY CONTROL: Permanent Gas analysis						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			14/04/2020	1	14/04/2020	14/04/2020		14/04/2020	[NT]
Date analysed	-			14/04/2020	1	14/04/2020	14/04/2020		14/04/2020	[NT]
Methane (CH_4)	%	0.01	AT-003	<0.01	1	<0.01	<0.01	0	84	[NT]
Carbon Dioxide (CO_2)	%	0.01	AT-003	<0.01	1	0.12	0.12	0	101	[NT]
Oxygen (O_2)	%	0.01	AT-003	<0.01	1	21	21	0	102	[NT]
Carbon Monoxide (CO)	%	0.01	AT-003	<0.01	1	<0.01	<0.01	0	98	[NT]
Hydrogen Sulphide H_2S*	%	0.1	AT-003	<0.1	1	<0.1	<0.1	0	119	[NT]

QUALITY CONTROL: TPH Air/ Air Phase Hydrocarbon						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			15/04/2020	1	15/04/2020	15/04/2020		15/04/2020	[NT]
Date analysed	-			15/04/2020	1	15/04/2020	15/04/2020		15/04/2020	[NT]
TPH C_5 - C_8 Aliphatic	µg/m^3	200	AT-005	<200	1	<200	<200	0	88	[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	83	[NT]
TPH C_6 - C_{10} - BTEX (F1)	µg/m^3	200	TO15	<200	1	<200	<200	0	89	[NT]
TPH >C_{10} - C_{12} - Naphthalene (F2)	µg/m^3	40	TO15	<40	1	<40	<40	0	86	[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.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

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 (not SPOCAS); 60-140% for organics/SPOCAS (+/-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.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

AIR_TO15/AIR_TO15_UG

PQL has been raised for Propylene,Chloromethane due to interference from analytes (other than those being tested) in the sample/s.

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	84822.03	**Suburb:** Eastern Creek	**To:** Envirolabs
Project Name:	Eastern Creek EIS	**Order Number**	12 Ashley Street, Chatswood
Project Manager:	Paul Gorman	**Sampler:** JJH	**Attn:** Daniel Ford
Emails:	joel.james-hall@douglaspartners.com.au paul.gorman@douglaspartners.com.au		**Phone:** 99106200
Date Required:	Standard ☑		**Email:** AirToxSydney@envirolabservices.com.au
Prior Storage:	☐ Shelved	Do samples contain 'potential' HBM? Yes ☐ No ☑ (If YES, then handle, transport and store in accordance with FPM HAZ	

Sample ID	Lab ID	Date Sampled	Tube / Can No	Analytes: Start Vac	Stop Vac	TO15 (VOC, BTEX), TRH	CH4, CO2, CO, O2, H2S	IPA	Hold	Flow rate (ml/min)	Sample duration (min)	
BH208	1	09-Apr-14	3517	-29	-7	X	X					
BH208	2	09-Apr-14	8389215063						X	113	5	
BH2	3	09-Apr-14	3520	-29	-7	X	X					
BH2	4	09-Apr-14	8389215060						X	113	5	
BH201	5	09-Apr-14	3533 (2558)	-28	-7	X	X					
BH4	6	09-Apr-14	3289	-30	-7	X	X					
BH4	7	09-Apr-14	8389215061						X	113	5	
BH213	8	09-Apr-14	3282 8389215062	-30	-7	x	x					
BH213	9	09-Apr-14	~~8076720450~~ CG						X	113	5	
BH201	10	09-Apr-14	8389215059						x	113	5	
IPA	11	09-Apr-14	8389215058 (CG)					X		113	2	
BH204	12	09-Apr-14	1868	-29	-7	x	x					
BH204	13	09-Apr-14	8389215064						X	113	5	
Blank	14	09-Apr-14	8389215055						X	113	5	
PQL (S) mg/kg												**ANZECC PQLs req'd for all water analy**

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Lab Report/Reference No:

Total number of samples in container:

Relinquished by: JJH

Transported to laboratory by:

Send Results to: Douglas Partners Pty Ltd

Address

Phone: **Fax:**

Signed:

Received by:

Date & Time:

ENVIROLAB GROUP
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 240796
Date Received: 14/04/20
Time Received: 16:05
~~Received By:~~ DF
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Daniel Ford

From: Joel James-Hall <joel.james-hall@douglaspartners.com.au>
Sent: Tuesday, 14 April 2020 4:48 PM
To: Daniel Ford
Cc: AirTox Sydney
Subject: RE: 84822.03 Eastern Creek EIS

Happy with all of that, thanks Daniel.

Joel James-Hall | Environmental Engineer
Douglas Partners Pty Ltd | ABN 75 053 980 117 | www.douglaspartners.com.au
96 Hermitage Road West Ryde NSW 2114 | PO Box 472 West Ryde NSW 1685
P: 02 9809 0666 | E: joel.james-hall@douglaspartners.com.au



CLIENT CHO
2020 WINNE

To find information on our COVID-19 preparations, please visit douglaspartners.com.au/news/covid-19

This email is confidential. If you are not the intended recipient, please notify us immediately and be aware that any disclosure, copying, distribution or use of the contents of this information is prohibited. Please note that the company does not make any commitment through emails not confirmed by fax or letter.

From: Daniel Ford <DFord@envirolab.com.au>
Sent: Tuesday, 14 April 2020 4:44 PM
To: Joel James-Hall <joel.james-hall@douglaspartners.com.au>
Cc: AirTox Sydney <AirToxSydney@envirolabservices.com.au>
Subject: 84822.03 Eastern Creek EIS

Hi Joel,

We received your vapour samples from eastern creek not too long ago. I thought I would pass on a few ID changes we have made for your records. Please let us know if you would like them done differently.

We have updated the CoC (attached) so that it matches the labelling on the samples, CoC changes as below:

- Sample 5 (BH201): Canister 2558 (rather than 3533) has been labelled as BH201
- Sample 9 (BH213): Carbon tube ID 8389215062 has been labelled as BH213
- Sample 11 (IPA): Carbon tube ID 8389215058 has been labelled as IPA

Also, I just wanted to confirm, that similarly to a job that DP completed recently, that you are happy for H2S to be reported from GC-FID.

Kind Regards,

Daniel Ford | Technical Officer | Envirolab Services Pty Ltd
***Celebrating 15 years of* Great Science. Great Service.**
12 Ashley Street Chatswood NSW 2067
T 612 9910 6200 **F** 612 9910 6201
E dford@envirolab.com.au | **W** www.envirolab.com.au

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2012347**	Page	: 1 of 5
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR PAUL GORMAN	Contact	: Customer Services ES
Address	: 1/28 KESSLING AVENUE KUNDA PARK QLD 4556	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 07 32378900	Telephone	: +61-2-8784 8555
Project	: 84822.03 Eastern Creek	Date Samples Received	: 09-Apr-2020 14:20
Order number	: ----	Date Analysis Commenced	: 14-Apr-2020
C-O-C number	: ----	Issue Date	: 17-Apr-2020 18:26
Sampler	: JJH/TB		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

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

General Comments

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

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

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

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

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

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

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

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Total PAH reported as the sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene and Benzo(g,h,i)perylene.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	BD2/20200307	----	----	----	----
			Client sampling date / time	07-Apr-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2012347-001	--------	--------	--------	--------
				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	**0.061**	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	**0.098**	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	**0.002**	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	**1.53**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
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	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	BD2/20200307	----	----	----	----
				Client sampling date / time	07-Apr-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2012347-001	--------	--------	--------	--------
					Result	----	----	----	----
EP080: BTEXN - Continued									
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP132B: Polynuclear Aromatic Hydrocarbons									
3-Methylcholanthrene	56-49-5	0.1	µg/L		<0.1	----	----	----	----
2-Methylnaphthalene	91-57-6	0.1	µg/L		<0.1	----	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L		<0.1	----	----	----	----
Acenaphthene	83-32-9	0.1	µg/L		<0.1	----	----	----	----
Acenaphthylene	208-96-8	0.1	µg/L		<0.1	----	----	----	----
Anthracene	120-12-7	0.1	µg/L		<0.1	----	----	----	----
Benz(a)anthracene	56-55-3	0.1	µg/L		<0.1	----	----	----	----
Benzo(a)pyrene	50-32-8	0.05	µg/L		<0.05	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.1	µg/L		<0.1	----	----	----	----
Benzo(e)pyrene	192-97-2	0.1	µg/L		<0.1	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.1	µg/L		<0.1	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.1	µg/L		<0.1	----	----	----	----
Chrysene	218-01-9	0.1	µg/L		<0.1	----	----	----	----
Coronene	191-07-1	0.1	µg/L		<0.1	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.1	µg/L		<0.1	----	----	----	----
Fluoranthene	206-44-0	0.1	µg/L		<0.1	----	----	----	----
Fluorene	86-73-7	0.1	µg/L		<0.1	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L		<0.1	----	----	----	----
Naphthalene	91-20-3	0.1	µg/L		<0.1	----	----	----	----
Perylene	198-55-0	0.1	µg/L		<0.1	----	----	----	----
Phenanthrene	85-01-8	0.1	µg/L		<0.1	----	----	----	----
Pyrene	129-00-0	0.1	µg/L		<0.1	----	----	----	----
^ Sum of PAHs	----	0.05	µg/L		<0.05	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.05	µg/L		<0.05	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**91.1**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**93.9**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**98.9**	----	----	----	----
EP132T: Base/Neutral Extractable Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		**66.4**	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%		**88.1**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%		**114**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
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
EP132T: Base/Neutral Extractable Surrogates			
2-Fluorobiphenyl	321-60-8	43	135
Anthracene-d10	1719-06-8	48	138
4-Terphenyl-d14	1718-51-0	48	144

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2012347**	Page	: 1 of 8
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR PAUL GORMAN	Contact	: Customer Services ES
Address	: 1/28 KESSLING AVENUE KUNDA PARK QLD 4556	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 07 32378900	Telephone	: +61-2-8784 8555
Project	: 84822.03 Eastern Creek	Date Samples Received	: 09-Apr-2020
Order number	: ----	Date Analysis Commenced	: 14-Apr-2020
C-O-C number	: ----	Issue Date	: 17-Apr-2020
Sampler	: JJH/TB		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

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

This Quality Control Report contains the following information:

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

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

General Comments

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

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 2967414)									
ES2012305-002	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: Manganese	7439-96-5	0.001	mg/L	0.011	0.010	12.6	0% - 50%
		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	0.008	0.008	0.00	No Limit
ES2012093-001	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	0.002	0.002	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.990	0.973	1.78	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.044	0.043	0.00	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.007	0.006	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.173	0.173	0.00	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2967417)									
ES2012093-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EW2001865-003	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: 2964231)									
ES2012347-001	BD2/20200307	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: 2969746)									

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 (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2969746) - continued									
ES2012157-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
ES2012287-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2964231)									
ES2012347-001	BD2/20200307	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: 2969746)									
ES2012157-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
ES2012287-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 2969746)									
ES2012157-001	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
ES2012287-001	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
EP132B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2967362)									
ES2012347-001	BD2/20200307	EP132: Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP132: 3-Methylcholanthrene	56-49-5	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: 2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: 7.12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Acenaphthene	83-32-9	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Acenaphthylene	208-96-8	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Anthracene	120-12-7	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Benzo(g.h.i)perylene	191-24-2	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Chrysene	218-01-9	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Coronene	191-07-1	0.1	µg/L	<0.1	<0.1	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP132B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2967362) - continued									
ES2012347-001	BD2/20200307	EP132: Dibenz(a.h)anthracene	53-70-3	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Fluoranthene	206-44-0	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Fluorene	86-73-7	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Naphthalene	91-20-3	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Perylene	198-55-0	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Phenanthrene	85-01-8	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Pyrene	129-00-0	0.1	µg/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: **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
EG020T: Total Metals by ICP-MS (QCLot: 2967414)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.3	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	98.3	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	98.3	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.0	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	91.3	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	99.3	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	93.7	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	96.4	79.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2967417)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	98.6	77.0	111
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2964231)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	85.6	55.8	112
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	87.0	71.6	113
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	74.7	56.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2969746)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	88.5	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2964231)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	82.5	57.9	119
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	80.2	62.5	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	83.2	61.5	121
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2969746)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	92.4	75.0	127
EP080: BTEXN (QCLot: 2969746)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	90.6	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	96.0	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	101	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	99.7	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	104	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	104	70.0	120
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 2967362)								
EP132: 3-Methylcholanthrene	56-49-5	0.1	µg/L	<0.1	2 µg/L	# 131	60.0	120
EP132: 2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	2 µg/L	71.6	59.0	123

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
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 2967362) - continued								
EP132: 7.12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	2 µg/L	99.0	36.0	144
EP132: Acenaphthene	83-32-9	0.1	µg/L	<0.1	2 µg/L	85.5	64.0	122
EP132: Acenaphthylene	208-96-8	0.1	µg/L	<0.1	2 µg/L	89.7	64.0	126
EP132: Anthracene	120-12-7	0.1	µg/L	<0.1	2 µg/L	110	65.0	127
EP132: Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	2 µg/L	128	64.0	130
EP132: Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	2 µg/L	125	64.0	126
EP132: Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.1	µg/L	<0.1	2 µg/L	124	62.0	126
EP132: Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	2 µg/L	122	62.0	126
EP132: Benzo(g.h.i)perylene	191-24-2	0.1	µg/L	<0.1	2 µg/L	126	56.0	126
EP132: Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	2 µg/L	119	68.0	130
EP132: Chrysene	218-01-9	0.1	µg/L	<0.1	2 µg/L	120	66.0	130
EP132: Coronene	191-07-1	0.1	µg/L	<0.1	2 µg/L	129	35.0	133
EP132: Dibenz(a.h)anthracene	53-70-3	0.1	µg/L	<0.1	2 µg/L	128	58.0	128
EP132: Fluoranthene	206-44-0	0.1	µg/L	<0.1	2 µg/L	120	65.0	127
EP132: Fluorene	86-73-7	0.1	µg/L	<0.1	2 µg/L	98.4	64.0	124
EP132: Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L	<0.1	2 µg/L	# 129	57.0	127
EP132: Naphthalene	91-20-3	0.1	µg/L	<0.1	2 µg/L	63.0	54.0	128
EP132: Perylene	198-55-0	0.1	µg/L	<0.1	2 µg/L	120	66.0	130
EP132: Phenanthrene	85-01-8	0.1	µg/L	<0.1	2 µg/L	109	65.0	129
EP132: Pyrene	129-00-0	0.1	µg/L	<0.1	2 µg/L	118	66.0	128

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
EG020T: Total Metals by ICP-MS (QCLot: 2967414)							
ES2012270-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	94.5	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	96.1	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	88.6	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	88.6	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	83.8	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	88.4	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	92.4	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	93.6	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2967417)							
ES2012287-001	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	79.2	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2964231)							
ES2012347-001	BD2/20200307	EP071: C10 - C14 Fraction	----	200 µg/L	87.6	70.0	130
		EP071: C15 - C28 Fraction	----	300 µg/L	121	71.0	130
		EP071: C29 - C36 Fraction	----	200 µg/L	83.6	67.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2969746)							
ES2012157-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	100	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2964231)							
ES2012347-001	BD2/20200307	EP071: >C10 - C16 Fraction	----	250 µg/L	89.8	70.0	130
		EP071: >C16 - C34 Fraction	----	350 µg/L	113	75.0	130
		EP071: >C34 - C40 Fraction	----	150 µg/L	101	67.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2969746)							
ES2012157-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	100.0	70.0	130
EP080: BTEXN (QCLot: 2969746)							
ES2012157-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	99.4	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	100	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	106	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	105	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	108	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	87.7	70.0	130
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 2967362)							
ES2012347-001	BD2/20200307	EP132: 3-Methylcholanthrene	56-49-5	2 µg/L	84.9	59.0	115
		EP132: 2-Methylnaphthalene	91-57-6	2 µg/L	56.2	46.0	120
		EP132: 7.12-Dimethylbenz(a)anthracene	57-97-6	2 µg/L	61.4	21.0	135
		EP132: Acenaphthene	83-32-9	2 µg/L	63.9	62.0	114
		EP132: Acenaphthylene	208-96-8	2 µg/L	67.7	61.0	119
		EP132: Anthracene	120-12-7	2 µg/L	72.1	68.0	116
		EP132: Benz(a)anthracene	56-55-3	2 µg/L	80.1	67.0	122
		EP132: Benzo(a)pyrene	50-32-8	2 µg/L	78.6	72.0	114
		EP132: Benzo(b+j)fluoranthene	205-99-2 205-82-3	2 µg/L	77.8	69.0	119
		EP132: Benzo(e)pyrene	192-97-2	2 µg/L	77.0	71.0	119
		EP132: Benzo(g.h.i)perylene	191-24-2	2 µg/L	78.8	49.0	133
		EP132: Benzo(k)fluoranthene	207-08-9	2 µg/L	76.1	71.0	124
		EP132: Chrysene	218-01-9	2 µg/L	76.4	70.0	118
		EP132: Coronene	191-07-1	2 µg/L	80.0	29.0	138

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 2967362) - continued							
ES2012347-001	BD2/20200307	EP132: Dibenz(a.h)anthracene	53-70-3	2 µg/L	79.8	60.0	122
		EP132: Fluoranthene	206-44-0	2 µg/L	77.4	65.0	121
		EP132: Fluorene	86-73-7	2 µg/L	68.5	63.0	118
		EP132: Indeno(1.2.3.cd)pyrene	193-39-5	2 µg/L	80.5	57.0	123
		EP132: Naphthalene	91-20-3	2 µg/L	# 50.3	53.0	115
		EP132: Perylene	198-55-0	2 µg/L	75.9	71.0	118
		EP132: Phenanthrene	85-01-8	2 µg/L	71.4	67.0	120
		EP132: Pyrene	129-00-0	2 µg/L	76.5	70.0	117

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2012347**	Page	: 1 of 5
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR PAUL GORMAN	Telephone	: +61-2-8784 8555
Project	: 84822.03 Eastern Creek	Date Samples Received	: 09-Apr-2020
Site	: ----	Issue Date	: 17-Apr-2020
Sampler	: JJH/TB	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.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

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

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP132B: Polynuclear Aromatic Hydrocarbons	QC-2967362-002	----	**3-Methylcholanthrene**	56-49-5	131 %	60.0-120%	**Recovery greater than upper control limit**
EP132B: Polynuclear Aromatic Hydrocarbons	QC-2967362-002	----	**Indeno(1.2.3.cd)pyrene**	193-39-5	129 %	57.0-127%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
EP132B: Polynuclear Aromatic Hydrocarbons	ES2012347--001	BD2/20200307	**Naphthalene**	91-20-3	50.3 %	53.0-115%	**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: **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; Unspecified (EG020A-T)							
BD2/20200307	**07-Apr-2020**	**14-Apr-2020**	04-Oct-2020	✓	**14-Apr-2020**	04-Oct-2020	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unspecified (EG035T)							
BD2/20200307	**07-Apr-2020**	**----**	----	----	**15-Apr-2020**	05-May-2020	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
BD2/20200307	**07-Apr-2020**	**14-Apr-2020**	14-Apr-2020	✓	**14-Apr-2020**	24-May-2020	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
BD2/20200307	**07-Apr-2020**	**15-Apr-2020**	21-Apr-2020	✓	**15-Apr-2020**	21-Apr-2020	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
BD2/20200307	**07-Apr-2020**	**14-Apr-2020**	14-Apr-2020	✓	**14-Apr-2020**	24-May-2020	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
BD2/20200307	**07-Apr-2020**	**15-Apr-2020**	21-Apr-2020	✓	**15-Apr-2020**	21-Apr-2020	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
BD2/20200307	**07-Apr-2020**	**15-Apr-2020**	21-Apr-2020	✓	**15-Apr-2020**	21-Apr-2020	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP132B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP132)							
BD2/20200307	**07-Apr-2020**	**14-Apr-2020**	14-Apr-2020	✓	**15-Apr-2020**	24-May-2020	✓

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)							
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	1	4	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**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
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)
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)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260D 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)
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	WATER	In house: Referenced to USEPA 3640 (GPC Cleanup), 8270E GCMS Capiliary column, SIM mode. This method is compliant with NEPM (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
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 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.
Sep. Funnel Extraction /Acetylation of Phenolic Compounds	ORG14-AC	WATER	In house: Referenced to USEPA 3510 (Extraction) / In-house (Acetylation): A 1L sample is extracted into dichloromethane and concentrated to 1 mL with echange into cyclohexane. Phenolic compounds are reacted with acetic anhydride to yield phenyl acetates suitable for ultra-trace 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.

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	84822.03	**Suburb:**	Eastern Creek	**To:**	Envirolab Services
Project Name:	Eastern Creek	**Order Number**			
Project Manager:	PG	**Sampler:**	JJH/TB	**Attn:**	Aileen Hie
Emails:	paul.gorman@douglaspartners.com.au; joel.james-hall@douglaspartners.com.au			**Phone:**	(02) 9910 6200
Date Required:	Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☑			**Email:**	AHie@envirolab.com.au
Prior Storage:	☑ Esky ☑ Fridge ☐ Shelved	Do samples contain 'potential' HBM?	Yes ☐	No ☑	(If YES, then handle, transport and store in accordance with FPM HAZID)

Sample ID	Lab ID	Date Sampled	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: Combo 8L	Combo 10L	VOC	Ammonia	Anions	TRH/ BTEX	Combo 3L	pH	EC, DO, Turbidity, TN, TP (low)	Notes/preservation
ABH01	1	07/04/20	W	G,P		×	×	×	×			x		Sample date for all bottles should read 07.04.20, some are mislabelled as '7.3.20'
ABH02	2	07/04/20	W	G,P		×	×	×	×			x		
ABH03	3	07/04/20	W	G,P		×	×	×	×			x		
BH2	4	07/04/20	W	G,P		×	×	×	×			x		
BH4	5	07/04/20	W	G,P		×	×	×	×			x		
BH201	6	07/04/20	W	G,P		×	×	×	×			x		
BH204	7	07/04/20	W	G,P		×	×	×	×			x		
BH208	8	07/04/20	W	G,P		×	×	×	×			x		
BH213	9	07/04/20	W	G,P		×	×	×	×			x		
SW01	10	07/04/20	W	G,P	×		×	×	×			x	x	
SW02	11	07/04/20	W	G,P	×		×	×	×			x	x	
SW03	12	07/04/20	W	G,P	×		×	×	×			x	x	
SW04	13	07/04/20	W	G,P	×		×	×	×			x	x	
SW05	14	07/04/20	W	G,P	×		×	×	×			x	x	
SW06	15	07/04/20	W	G,P	×		×	×	×			x	x	
PQL (S) mg/kg												**ANZECC PQLs req**		

HT

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 240597
Date Received: 8/4/20
Time Received: 1500
Received By: [signature]
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Environmental Division
Sydney
Work Order Reference
ES2012347

Telephone : +61-2-8784 8555

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here: 8HM plus Manganese

Lab Report/Reference No:

Total number of samples in container: **Relinquished by:** JJH **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd **Address** 96 Hermitage Road West Ryde NSW 2114 **Phone:**

Signed: [signature] **Received by:** **Date & Time:**

Relinq'd by ELS Syd [signature] 9/7/2020

Rec. [signature] 10/4/20 1420 AS 83°

Douglas Partners
Geotechnics / Environment / Groundwater

240547

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	84822.03	**Suburb:**	Eastern Creek	**To:**	Envirolab Services
Project Name:	Eastern Creek	**Order Number**			
Project Manager:	PG	**Sampler:**	JJH/TB	**Attn:**	Aileen Hie
Emails:	paul.gorman@douglaspartners.com.au; joel.james-hall@douglaspartners.com.au			**Phone:**	(02) 9910 6200
Date Required:	Same day ☑ 24 hours ☐ 48 hours ☐ 72 hours ☐ Standard ☑			**Email:**	AHie@envirolab.com.au
Prior Storage:	☑ Esky ☑ Fridge ☐ Shelved	Do samples contain 'potential' HBM?	Yes ☐ No ☑ (If YES, then handle, transport and store in accordance with FPM HAZID)		

Sample ID	Lab ID	Sampling Date	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: Combo 8L	Combo 10L	VOC	Ammonia	Anions	TRH/ BTEX	Combo 3L	pH	EC, DO, Turbidity, TN, TP (low)	Notes/preservation
BD1/20200307	16	07/04/20	W	G,P							x			intra lab duplicate
Trip Blank	17	07/04/20	W	G						x				
Trip Spike	18	07/04/20	W	G						x				
BD2/20200307	-	07/04/20	W	G,P							x			inter lab duplicate
ABH08	19	07/04/20	W	G,P		x	x	x	x			x		
PQL (S) mg/kg												**ANZECC PQLs req'd for all water analytes** ☐		

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here: Add manganese

Lab Report/Reference No:

Total number of samples in container: **Relinquished by:** JJH **Transported to laboratory by:** Courier

Send Results to: Douglas Partners Pty Ltd **Address:** 96 Hermitage Road West Ryde NSW 2114 **Phone:** **Fax:**

Signed: **Received by:** **Date & Time:**

Rec'd Sayfr 10/4/20 1420 83c