Technical report G3

Due diligence contamination investigation

Douglas Partners
Geotechnics / Environment / Groundwater

Integrated Practical Solutions

Report on
Due Diligence
Environmental (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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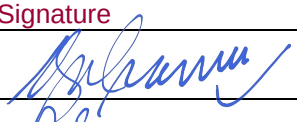
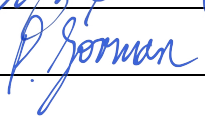
Author		14 August 2020
Reviewer		14 August 2020

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Executive Summary

This Due Diligence Environmental (Contamination) Investigation was undertaken by Douglas Partners Pty Ltd (DP) at 339 Wallgrove Road, Eastern Creek (the site). The site is proposed for an industrial land use (energy from waste facility). The objective of the investigation was to investigate the existence of known or potential contamination sources, and to assess the risk posed by those sources on the proposed development, through a source-pathway-receptor Conceptual Site Model (CSM).

The scope of this investigation included a review of selected available historical information, a site walkover to identify features, land uses and sampling targets, targeted intrusive investigations including soil, groundwater, surface water and soil gas sampling. The adopted sampling locations are shown on Drawing 1, Appendix A.

The site was most recently used largely for poultry farming, which ceased operation in 2019. The site occupies an area of approximately 8.7 hectares. The dominant site features at the time of the investigation included large poultry sheds, multiple workshops and storage buildings, and a dam on the eastern boundary. The site had been formed with a number of levels, through cut and filling in the past. Some additional filling (particularly at the northern end) had taken place between the initial round of sampling in 2015 and the most recent sampling in 2019.

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.

A preliminary CSM was developed on the basis of the historical information and site walkover, which identified the following potential sources of contamination:

- Filling (including stockpiles);
- Poultry keeping (poultry shed);
- Maintenance/workshop facilities (oil drums, oil spills);
- Product storage within drums and bulk bags;
- Adjacent SITA resource recovery facility and landfill (e.g., methane gas); and
- Existing buildings (i.e., hazardous building materials).

The identified contaminants of potential concern (COPC)comprised metals (arsenic, cadmium, copper, chromium, lead, mercury, nickel and zinc), total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene and xylene (BTEX), phenols, organochlorine pesticides (OCP), organophosphorus pesticides (OPP), polychlorinated biphenyls (PCB), volatile organic compounds (VOC), asbestos and methane gas.

Based on field observations, the subsurface profile across the site 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), but up to 3.7 m in the fill platform on the southern boundary. Trace to some anthropogenics were encountered in some locations including roadbase aggregate, brick, concrete, slag, charcoal, and glass;

- CLAYS - Firm to very stiff, brown, red, orange and grey silty or shaly clays underlain the filling or were recorded from the surface to depths up to 5.7 m bgl; underlain by
- SHALE - Extremely low strength, increasing to high strength dark grey shale.

Water levels in the wells, measured in September 2019 ranged between 0.1 m (eastern boundary) and 4.8 m (north-western corner) below ground level.

Analyte concentrations in soil, water and soil gas were within the adopted site assessment criteria (SAC) with the exception of the following:

- A small number of copper, zinc and PAH concentrations in soil exceeding ecological based investigation and screening levels, not considered to be significant given the proposed industrial land use; and
- Some metals in groundwater considered to be reflective of regional conditions, and not significant.

On the basis of the field and analytical data, an updated CSM has been presented identifying the most likely source-pathway-receptor linkages, as follows:

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. Additional investigations are recommended in areas of deep fill in the central southern part of the site (elevated platform). Most likely potential contaminants include asbestos, lead, PAH based on the presence of building rubble and slag at BH9. 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). If contaminants are found to be present, risk mitigation actions for construction and maintenance workers include the use of appropriate PPE during excavations into the fill. If contaminants are found to be exceeding the SAC, 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).

Source	Transport Pathway	Potential Receptor	Risk Management Action Recommended
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). 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.
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 one round of monitoring, due to time available pre-settlement. 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.

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. 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) under the NSW EPA (2014) waste classification guidelines, with the exception of the 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 on-site.

Natural soils to be removed from the site are likely to be classified as virgin excavated natural material (VENM).

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 potential for soil, water and/or vapour contamination. The site can be made suitable for the proposed development, subject to addressing the risk management actions identified above, namely:

- Additional investigations in areas of deep fill in the central southern part of the site (elevated platform). Most likely potential contaminants include asbestos, lead, PAH based on the presence of building rubble and slag at BH9. The investigation should involve test pitting if possible to enable quantification of the asbestos risk in this part of the site;
- Removal of hazardous materials from existing buildings in accordance with relevant legislation, then validation of the building envelopes upon completion of demolition;
- Additional rounds of soil gas sampling at a suggested quarterly interval for a period of one year to assess seasonal influences, if possible;
- Additional rounds of groundwater sampling (a potential source for soil gas) at a suggested quarterly interval at the same time as soil gas, if possible;
- If a contamination exposure risk is identified through the actions outlined above, a Remediation Action Plan (RAP) and / or a Contamination Management Plan (CMP) may be required; and
- As part of future civil and construction works an Unexpected Finds Protocol (UFP) will need to be developed and implemented.

Table of Contents

Page

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
3. Site Information 8
4. NSW EPA Records of Notices and Licenses 9
5. Aerial Photograph Review 10
6. Site Walkover 11
6.1 Observations in 2015 11
6.2 Observations in 2019 12
7. Preliminary Conceptual Site Model 13
7.1 Potential Sources 14
7.2 Potential Receptors 14
7.3 Potential Pathways 15
7.4 Summary of Preliminary CSM 15
8. Fieldwork and Analysis 18
8.1 Soil Sampling and Monitoring Well Locations and Rationale 18
8.2 Drilling Methods 18
8.3 Groundwater Wells 19
8.4 Soil Sampling Procedures 19
8.5 Soil Gas Sampling 20
8.6 Groundwater Sampling 20
8.7 Surface Water Sampling 20
8.8 Analytical Rationale 21
9. Site Assessment Criteria 21
9.1 Soils 22
9.1.1 Health Investigation and Screening Levels 22

9.1.2 Ecological Investigation Levels 24
9.1.3 Ecological Screening Levels - Petroleum Hydrocarbons 25
9.1.4 Management Limits - Petroleum Hydrocarbons 26
9.1.5 Asbestos in Soil 26
9.2 Groundwater / Surface Water 27
9.2.1 Groundwater and Surface Water Investigation Levels 27
9.2.2 Health Screening Levels - Petroleum Hydrocarbons 29
9.3 Methane Gas 29
9.4 Soil Vapour 30
10. Field Work Observations 31
11. Analytical Results Summary 33
12. Analysis Results 34
12.1 Current Investigation 34
12.1.1 Soil Samples 34
12.1.2 Groundwater and Surface Water 34
12.1.3 Soil Vapour 35
12.2 DP (2015) 35
12.2.1 Surface Soils 35
12.2.2 Material Sample 36
12.2.3 Soils (boreholes) and Dam Sediment 36
12.2.4 Dam Water and Groundwater 36
12.2.5 Methane Gas 37
12.3 Preliminary Waste Classification 37
12.3.1 Fill 37
12.3.2 Preliminary VENM Assessment 38
13. Discussion 38
13.1 Updated Conceptual Site Model 38
13.2 Soil Management 39
14. Conclusions and Recommendations 40
15. Limitations 40

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Appendices

Appendix A:	Drawings
	Notes About This Report
Appendix B:	Historical Aerial Photographs
Appendix C:	Site Photographs
Appendix D:	Quality Assurance and Quality Control Procedures
	Calibration Certificates
Appendix E:	Descriptive Notes
	Borehole Logs
	Groundwater Field Sheets
	Gas Field Sheets
	EPA Environment Protection Licenses, POEO Public Register
Appendix F:	Laboratory Results Tables
	Laboratory Certificates and Chain of Custody

Report on Due Diligence Environmental (Contamination) Investigation 339 Wallgrove Road, Eastern Creek

1. Introduction

This report presents the results of a Due Diligence Contamination Investigation undertaken by Douglas Partners Pty Ltd (DP) for the site at 339 Wallgrove Road, Eastern Creek (the site) as shown on Drawing, Appendix A. The work was commissioned by Mr Tim Cook on behalf of 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 DP's proposal SYD190923 dated 10 September 2019.

The site located at 339 Wallgrove Road in Eastern Creek and covers an area of approximately 8.67 ha and is proposed for 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 has previously completed geotechnical and contamination investigations for the adjoining properties on all sides of the site, including the waste and recycling facility to the north and east, the industrial business park immediately opposite the site on the western side of Wallgrove Road, areas of the Austral Bricks site to the south and west and proposed industrial parks to the south along Wallgrove Road (yet to commence).

Furthermore, DP has previously conducted a similar due diligence investigation at the site in 2015. The investigation was focussed on a proposed bulky goods warehouse type of development, and the investigated targeted potential areas and sources of environmental concern based on a developed conceptual site model. The investigation comprised soil, groundwater and soil gas sampling and testing. The information gathered in undertaking the previous investigation has been used in formulating the conclusions and recommendations outlined in this report, and has been supplemented with additional soil, water and soil vapour sampling and testing.

The objective of the due diligence contamination investigation was to investigate the existence of known or potential contamination sources, and to assess the risk posed by those sources on the proposed development, through a source-pathway-receptor Conceptual Site Model (CSM). It is understood that the investigation outcomes will be used to assess legacy, liability and costs around contamination / remediation for the purchaser.

The proposed scope of works is designed as a qualitative assessment of risk, targeting areas or locations within the site considered most likely to be impacted by the contamination sources identified. In the event that contamination (with respect to the proposed development) is identified, additional investigations (for delineation, guideline compliance and data gap addressing) are recommended for implementation as part of an Environmental Impact Study (EIS).

2. Scope of Works

2.1 Desktop and Preliminaries

The desktop component of works 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 Water NSW (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; 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-BH20, as shown on Drawing 1, 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. Metals 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 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;

- Collection of 17 surface soil samples (S1 to S17, as shown on Drawing 1, 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;
- Dispatch 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. The profile 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, which was expected.

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 are 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:

- Drill an additional four (4) boreholes (BH201, 204, 208, 213) for groundwater / soil gas well installation at the locations shown on the Drawing 1, 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 below ground level (bgl) to be consistent with previous installations and to enable adequate screening across the anticipated groundwater fluctuation zone;
- Collect soil samples from each of the test bores at regular intervals, changes in strata and where signs of contamination are observed;
- All fill samples were screened for volatile organic compounds (VOC) using a photo-ionisation detection (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. Metals monuments with lockable lids were installed around the wells;
- Each of the new monitoring wells, and the two existing wells (BH2 and BH4) were developed by pumping dry or a minimum of three well volumes;
- 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 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;
- 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);
  - Total recoverable hydrocarbons (TRH);
  - Benzene, toluene, ethylbenzene and xylenes - (BTEX);
  - Polycyclic aromatic hydrocarbons (PAH);
  - Total phenols;
  - Organochlorine pesticides (OCP) / organophosphate pesticides (OPP);
  - Polychlorinated biphenyls (PCB);
  - Volatile organic compounds (VOC);
  - Cyanide;
  - Ammonia;
  - Anions (Cl, SO4, NO2, NO3, PO4); and
  - Hardness.
- 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;
  - 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 recent site walkover 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 provide for a reasonable assessment of the "general" fill quality in the site.

The scope of works was as follows:

- Drill an additional up to 12 boreholes at the locations shown on Drawing 1, 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 Drawing 1, Appendix A.

The scope of works was as follows:

- Drill an additional 13 boreholes by hand (following concrete coring where required) at the locations shown on Drawing 1. The samples were taken from the depth interval of 0-0.15 m;
- Drill on additional single bore adjacent to an observed small incinerator near BH15 on Drawing 1;
- 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, as noted in Section 2.3, 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;
- 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.

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 2km south of the site and a childcare centre is within the Eastern Creek industrial area about 1km 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**.**

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) 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.

Site features observed at the time of the investigation are described in detail in Section 6.

4. NSW EPA Records of Notices and Licenses

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'.

5. 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 remains 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.

6. Site Walkover

6.1 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 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.

6.2 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 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).

7. 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).

7.1 Potential Sources

Based on the 2015 and current investigation, 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).

7.2 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. Human consumption of groundwater is therefore not considered in the SAC (Section 9).

Environmental Receptors:

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

R5 - Ecology; and

R6 - Groundwater (freshwater).

7.3 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.

7.4 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 storage within drums and bulk bags** Metals, TPH, BTEX and PAH **S5: Adjacent Resource Recovery Facility** Methane gas, BTEX, TRH, VOC	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)	
	P6: Direct contact by ecological receptors.	R5: Ecology	

Source	Transport Pathway	Receptor	Risk Management Action Recommended
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). 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.

8. 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.

8.1 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
- Groundwater and vapour quality in the vicinity of the adjoining waste recycling centre, and also hydraulically down-gradient within the site (BH201, BH204, BH208, BH211, BH2, BH4).

The test locations are shown on Drawing 1 in Appendix A. It is noted that BH20 could not be relocated in 2019 and therefore, could not be sampled at that time.

All test bores were drilled into and terminated within natural material (soil or bedrock) unless prior refusal was encountered.

Selected soil samples were analysed for the COPCs identified in the CSM. Samples were selected based on site observations (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 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 given that the investigation was for due diligence purposes, and the site was still in operation. Test pitting results in a greater degree of ground disturbance that could impact on site operations.

8.2 Drilling 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 below ground level (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.

Shallow bores and shallow surface samples were collected with hand tools from selected locations.

8.3 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 cover, with the exception of a Gatic cover at BH20. 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.

8.4 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 Photo-ionisation detector (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 sample analysis.

8.5 Soil Gas Sampling

Soil gas was sampled from BH2, BH4 and BH20 in 2015, and from six groundwater / vapour wells (BH201, BH204, BH213, BH208, BH2, BH4) in 2019.

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 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 E.

Air samples were then collected in 2019 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).

8.6 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. Note that due to the tight timeframe, only a short period of time elapsed between the well development and sampling and, as such, it is possible that drilling disturbance has impacted on test results.

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. 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.

8.7 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.

8.8 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 9.

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.

Due to the sampling methodology adopted (refer Section 8.1) only the presence or absence of asbestos in jar samples provided to the laboratory was performed. This approach does not provide for a quantification of asbestos in soils.

9. Site Assessment Criteria

Should the site be acquired, it is proposed for development into a waste treatment facility, including potentially incineration. As such, 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.

9.1 Soils

9.1.1 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'.

9.1.2 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 median pH and CEC values, the soil profile (in the upper layers) has an average pH of 7.22 (range 4.5 to 8.1) and CEC of 31.26 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 and CEC of 17.1 $cmol_c/kg$; assumed clay content 10%
	Copper	320	
	Nickel	420	
	Chromium III	670	
	Lead	1800	
	Zinc	1000	
PAH	Naphthalene	370	
OCP	DDT	640	

9.1.3 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 5 have been used to determine the ESL. The adopted ESL, from Table 1B (6), Schedule B1 of NEPC (2013) are shown in Table 6.

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	Future development / land use is commercial
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	

9.1.4 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

9.1.5 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 as part of these works, as the investigation process did not permit the volume of samples required (Section 8.1). 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.

9.2 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

9.2.1 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).

The adopted GIL for the analytes included in the assessment, and the corresponding source documents, are shown in Table 9. 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.

Table 9: Groundwater Investigation Levels (in µg/L unless otherwise stated)

Analyte		NEPC (2013) Fresh Waters [a]		Comments
Metals	Arsenic (V)	13	13	[#] Corrected for hardness (1023) for Groundwater Wells [^] Corrected for hardness (93) for Dam Water
	Cadmium	0.002[#]	0.00054[^]	
	Chromium (VI)	-	-	
	Copper	0.126[#]	0.0035[^]	
	Lead	0.09078[#]	0.0136[^]	
	Mercury (total)	0.00006	0.00006	
	Nickel	0.099[#]	0.0275[^]	
	Zinc	0.072[#]	0.02[^]	
PAH	Naphthalene	16		
	Benzo(a)pyrene	-		
BTEX	Benzene	950		
	Toluene	-		
	Ethylbenzene	-		
	Xylene (o)	350		
	Xylene (p)	200		
	Xylenes (Total)	-		
OCP	Chlordane	0.03		
	DDT	0.006		
	Endosulfan	0.03		
	Endrin	0.01		
	Heptachlor	0.01		
	Aldrin + Dieldrin	-		
	Lindane	0.2		
	Heptachlor Expoxide	-		
OPP	Chlorpyrifos	0.01		
	Diazinon	0.01		
	Dimethoate	0.15		
	Fenitrothion	0.2		
	Ethion	-		
PCB	Aroclor 1242	0.3		
	Aroclor 1254	0.01		
VOC	Trichloroethene	0.33 [b]		Given the exhaustive list of VOC contaminants, only those VOC concentrations detected above the laboratory reporting limits and with GILs have been included in this table
	Chloroform	0.37 [b]		

Notes:

a Investigation levels apply to typically slightly-moderately disturbed systems

b In cases where no high reliability trigger values are provided, the low reliability trigger values provided in ANZECC &ARMCANZ (2000) were used as screening levels

9.2.2 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 10.

Table 10: 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 11.

Table 11: 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'.

9.3 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).

9.4 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 12, below.

Table 12: 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 13, below.

Table 13: 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

10. Field Work Observations

Details of the subsurface conditions encountered in each borehole (including bores from 2015) 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).

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

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

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 14 together with the dates the wells were installed, purged and readings were taken.

Table 14: 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
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
4	5	54.7	06/05/15	17/09/19	0.1*	54.3	20/09/19

**Heavy rainfall immediately preceded the sampling*

DP 2015 Investigation

Bore	Depth (m)	Surface level (R.L.)	Installed	Purged	Reading / date		
					Water level (m b.g.l.)	Water level (R.L.)	Date
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

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 E. 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 (Drawing 2, Appendix A).

The field records during the sampling for general gases are included in Appendix E.

The field measured gas concentrations for 2019 were generally low. The highest methane concentration recorded was at well 201 at 0.6% (v/v). In addition, the maximum flow rate was recorded at well 201 at 0.3 l/hr. These readings characterise the gas situation at the site at 1. The gas protection guidance value (GPGV) of 1 for standard commercial and industrial buildings does not require further action to be taken as outlined in NSW EPA *Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases, 2012* (EPA, 2012)[1] and is classified as *Very Low Risk.*

Table 15 summarises the maximum methane and carbon dioxide concentrations and flow rates from the 2019 sampling exercise.

Table 15: Soil Vapour Monitoring Summary of Results

Location	LFG Monitoring					
	CH_4		CO_2		Flow Rate	
	Max % (v/v)	Date	Max % (v/v)	Date	Max (l/hr)	Date
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

[1] The NSW EPA *Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases 2012* is currently being reviewed. A draft was issued for comment in 2017, with a revised draft provided to DP in March 2018.

Location	LFG Monitoring					
	CH_4		CO_2		Flow Rate	
	Max % (v/v)	Date	Max % (v/v)	Date	Max (l/hr)	Date
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
Gas Screening Value= 3.6% * 3.5 l/hr = 0.0396 This equates to Characteristic Gas Situation 1.						

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.

It is noted that the CO_2 concentrations in BH204 and BH208 had not peaked by the 5 minute monitoring mark. Whilst the maximum concentration at these two locations may not have been met, the increase in concentration in the final 2 min of monitoring was less than 10% and hence was not increasing significantly when screening was completed. Moreover, applying the maximum recorded flow rate of 1.1 L/hr, a reading of 6.3% would be needed to generate a GPGV of over 1. Whilst the screening period is not considered to have a significant effect on the overall risk of hazardous ground gas (based on one monitoring round) future monitoring rounds will be undertaken over a long period.

As indicated on the field gas monitoring sheets in Appendix E, CO readings exceeding 100 ppm were reported for BH204 and BH208. 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.

11. Analytical Results Summary

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

Table 15a, 15b: Soil Samples Results (2019);

Table 15c: Preliminary Waste Classification;

Table 16: Groundwater / Surface Water Results (2019);

Table 17: Soil Vapour Report (2019);

Table 18: Surface Soil Results (2015);

Table 19: Material Results (2015);

Table 20: Soil (boreholes) and Dam Sediment Results (2015);

Table 21: Dam Water and Groundwater Results (2015); and

Table 22: Methane Gas Results (2015).

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

12. Analysis Results

12.1 Current Investigation

12.1.1 Soil Samples

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

Detectable concentrations of copper and zinc above the SAC were recorded in BH208 0-0.2 and BH217 0.2-0.3. These exceeded the EIL, but did not exceed the HIL.

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

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

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

12.1.3 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. The detections may be a result of the drilling process (as discussed previously), materials used and/or disturbance around the well which could not be properly stabilised given the tight timeframe for assessment. Additional vapour sampling and testing should be undertaken as part of the EIS to further assess these results. Again, note that the concentrations detected are relatively low.

12.2 DP (2015)

12.2.1 Surface Soils

All results for surface soil samples analysed for BTEX and PCB were below laboratory limits of reporting (Table 18).

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; 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 (Section 13.2). 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.

12.2.2 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 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. However, it provides context for any surface soil impacts in the area that may be present.

12.2.3 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 (Table 17). 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; 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.

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.

12.2.4 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.

12.2.5 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.

12.3 Preliminary Waste Classification

12.3.1 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):

- 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; and
- BH217 0.2-0.3: 280 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; and
- BH208 0.0-0.2 (laboratory replicate): 73 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 recorded concentrations within the TCLP1 and SCC1 contaminant thresholds for GSW for metals.

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), with the exception of the following material:

- The surface soils in the footprints of the chicken 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 in-situ filling material on-site.

It is noted, however, 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.

12.3.2 Preliminary VENM Assessment

Twelve primary samples collected from natural soils were tested and recorded concentrations within ANZECC background ranges (Table A1). 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 10 are consistent with VENM. It is noted that if VENM is to be re-used on a receiver site, VENM should be checked to comply with the receiving site's requirements.

Again, this is a preliminary classification. All soils proposed to be removed from the site must be waste classified separately prior to disposal

13. Discussion

13.1 Updated Conceptual Site Model

On the basis of the field and analytical results presented herein, the preliminary CSM presented in Section 7 is updated in the following Table 23, presenting likely source-pathway-receptor linkages.

Table 23: 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. Additional investigations are recommended in areas of deep fill in the central southern part of the site (elevated platform). Most likely potential contaminants include asbestos, lead, PAH based on the presence of building rubble and slag at BH9. 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). If contaminants are found to be present, risk mitigation actions for construction and maintenance workers include the use of appropriate PPE during excavations into the fill. If contaminants are found to be exceeding the SAC, 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).

Source	Transport Pathway	Potential Receptor	Risk Management Action Recommended
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). 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.
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 one round of monitoring, due to time available pre-settlement. 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.

13.2 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 12.3, 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) under the NSW EPA (2014) waste classification guidelines, with the exception of the 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 requires these soils to be stripped, waste classified and disposed off-site separately to the remaining fill material on-site.

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.

14. Conclusions and Recommendations

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 potential for soil, water and/or vapour contamination. The site can be made suitable for the proposed development, subject to addressing the risk management actions identified in Section 13, namely:

- Additional investigations in areas of deep fill in the central southern part of the site (elevated platform). Most likely potential contaminants include asbestos, lead, PAH based on the presence of building rubble and slag at BH9. The investigation should involve test pitting if possible to enable quantification of the asbestos risk in this part of the site;
- Removal of hazardous materials from existing buildings in accordance with relevant legislation, then validation of the building envelopes upon completion of demolition;
- Additional rounds of soil gas sampling at a suggested quarterly interval for a period of one year to assess seasonal influences, if possible;
- Additional rounds of groundwater sampling (a potential source for soil gas) at a suggested quarterly interval at the same time as soil gas, if possible;
- If a contamination exposure risk is identified through the actions outlined above, a remediation action plan (RAP) and/or a contamination management plan (CMP) may be required; and
- As part of future civil and construction works an Unexpected Finds Protocol (UFP) will need to be developed and implemented.

15. 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 proposal SYD1190923 dated 10 September 2019. 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.

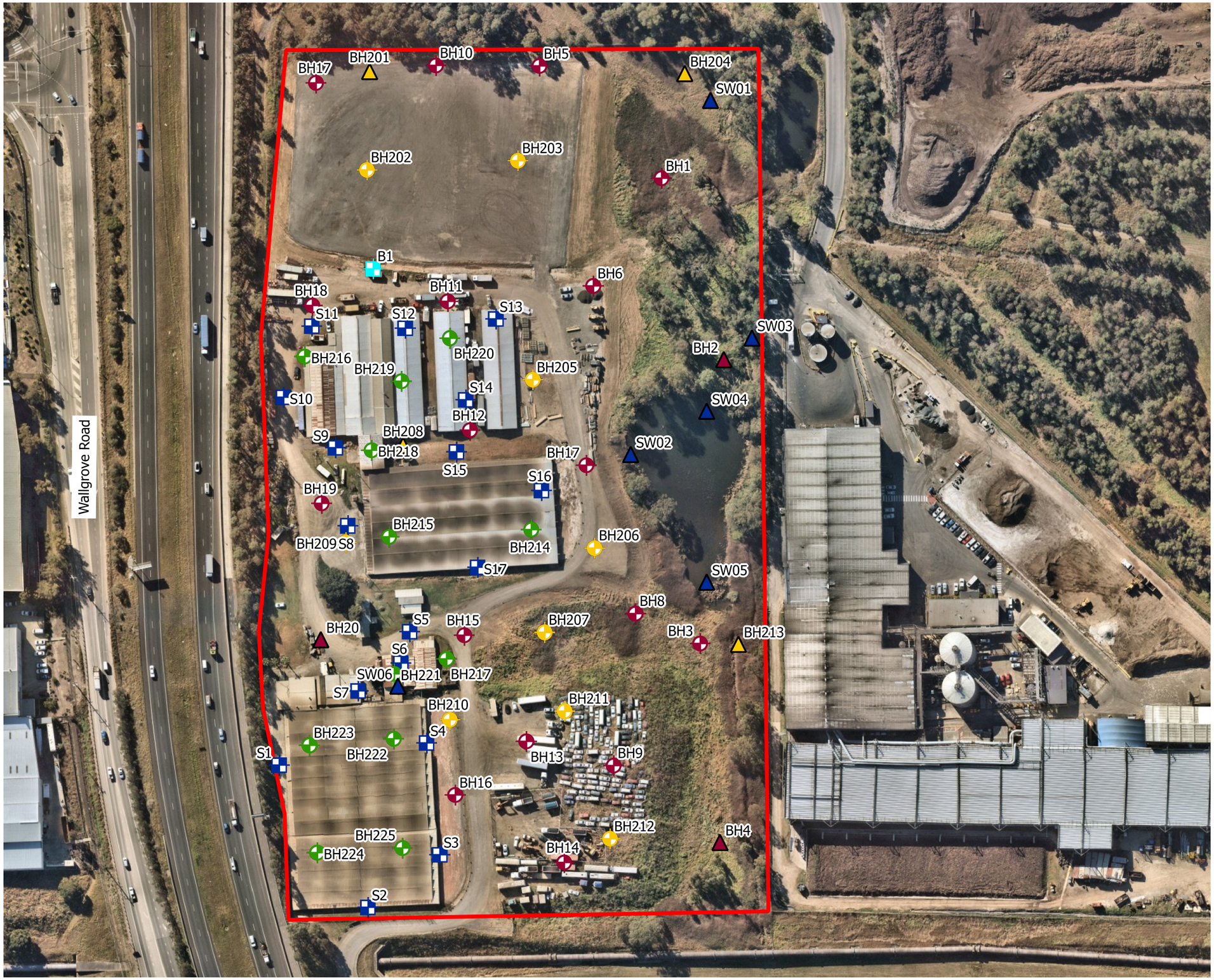
Although the sampling plan adopted for this investigation is considered appropriate to achieve the stated project objectives, there are necessarily parts of the site that have not been sampled and analysed. This is either due to undetected variations in ground conditions or to parts of the site being 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

Drawings

Notes About This Report





Locality Plan

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

Legend

- Boreholes with Groundwater/Gas Wells Installed (current investigation)
- Boreholes (current investigation)
- Hand Augered Boreholes (current investigation)
- Surface Water Samples (current investigation)
- Previous Borehole
- Previous Borehole (Groundwater Well Installed)
- Previous Surface Samples
- Previous Bag Sample

0 25 50 75 100 m

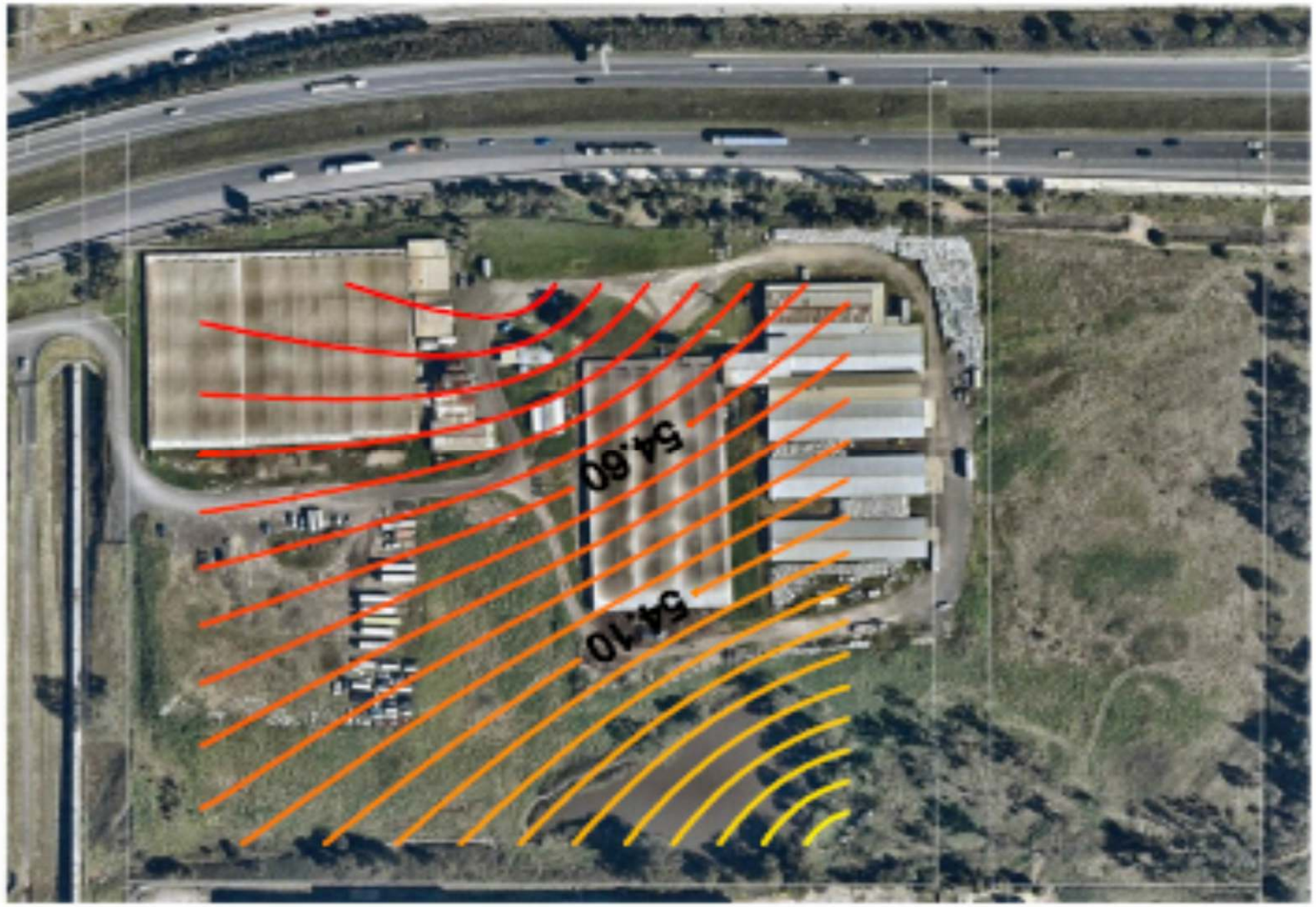
Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT:	Cleanaway Operations Pty Ltd	
OFFICE:	Sydney	DRAWN BY: JJH
SCALE:	1:1750	DATE: 12.09.2019

TITLE: **Current and Previous Test Locations**
Due Diligence Investigation
339 Wallgrove Road, EASTERN CREEK

N

PROJECT No:	84822.02
DRAWING No:	1
REVISION:	0



Not to scale
Source map: Nearmap

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Cleanaway Operations Pty Ltd	**Groundwater Flow Analysis**	PROJECT No: 84822.02
	OFFICE: Sydney	**Due Diligence Investigation**	DWG No: 2
	DATE: 27 Sep 2019	**339 Wallgrove Rd, EASTERN CREEK**	REVISION: 1

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

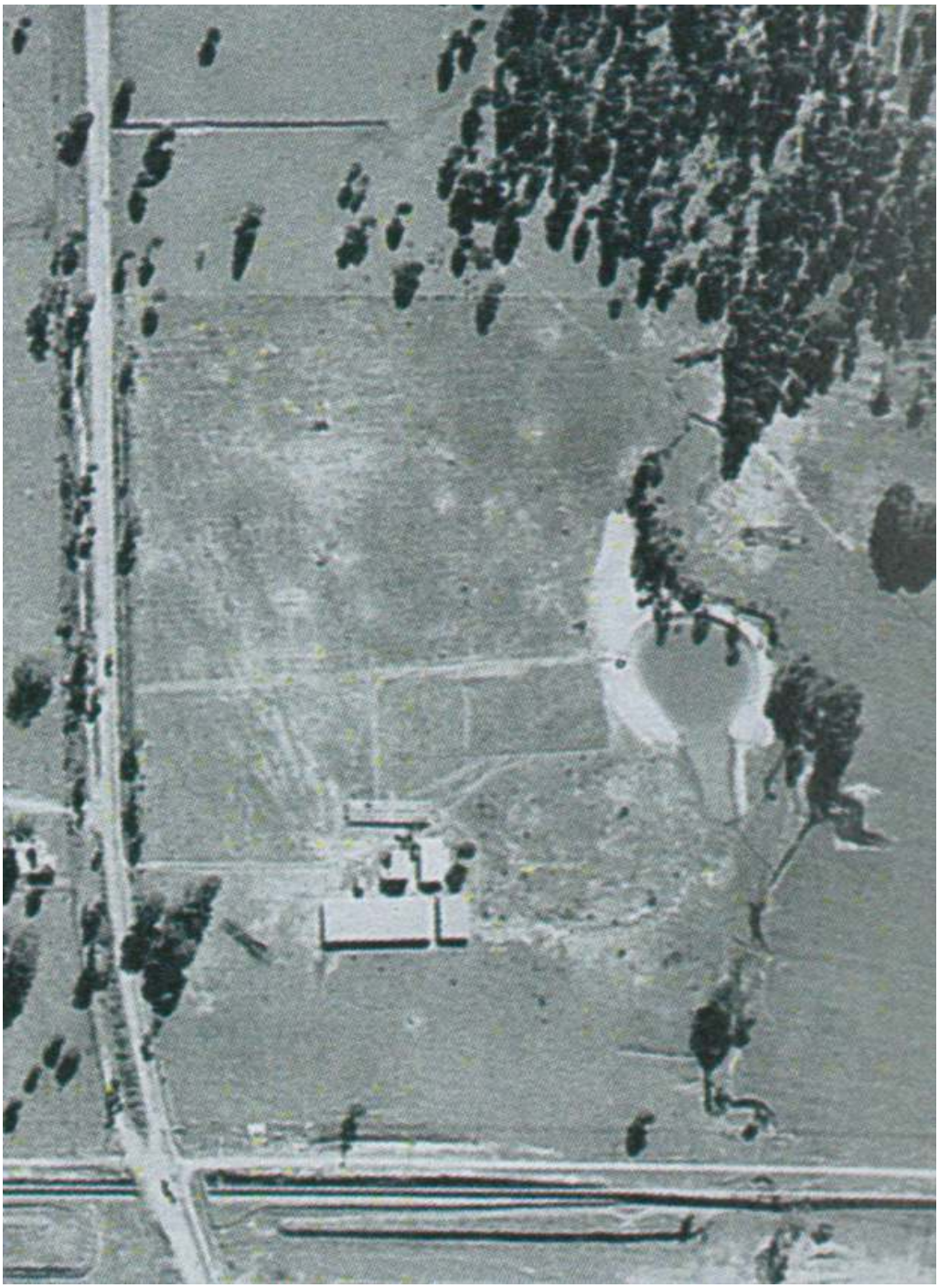
The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

Appendix B

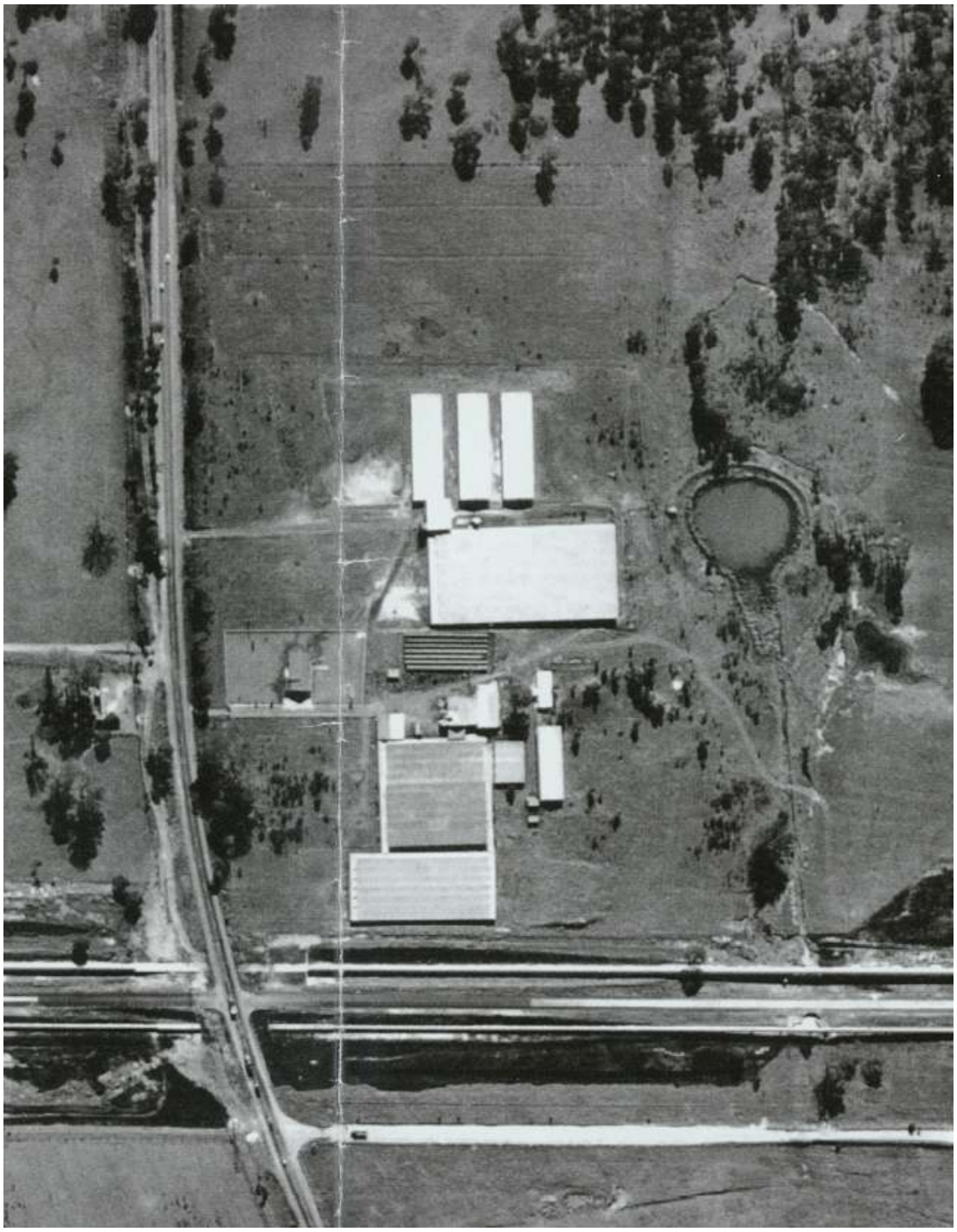
Historical Aerial Photographs



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

Appendix C

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

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.

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 S9 Site Assessment Criteria S10 Field Work Observations S11 Analytical Results Summary S12 Analysis and Discussion of Results
Define the Boundary of the Assessment	S3 Site Identification and Description Drawing 1 - Appendix A
Develop a Decision Rule	S9 Site Assessment Criteria
Specify Acceptable Limits on Decision Errors	S8 Fieldwork and Analysis S9 Site Assessment Criteria QA/QC Procedures and Results – Sections Q2, Q3
Optimise the Design for Obtaining Data	S2 Scope of Works S8 Fieldwork and Analysis QA/QC Procedures and Results – Sections Q2, Q3

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 8 and the laboratory results certificates in Appendix F 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[2]
Trip Spikes	1 per field batch	60-140% recovery	Yes[3]
Trip Blanks	1 per field batch	<PQL/LOR	Yes[3]
Rinsates	1 per day	<PQL/LOR	Yes[4]

NOTES:
1 qualitative assessment of RPD results overall; refer Section Q2.1
2 qualitative assessment of RPD results overall; refer Section Q2.2
3 Results reported in Tables QA4 to QA7
4 Results reported in Table 16

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 for soil replicates and Table QA2 for water replicates.

Note that, where both samples are below LOR/PQL the difference and RPD has been given as zero. Where one sample is reported below LOR/PQL, but a concentration is reported for the other, the LOR/PQL value has been used for calculation of the RPD for the less than LOR/PQL sample.

The calculated RPD values were within the acceptable range of ± 30 for inorganic analytes and ± 50% for organics with the with the exception of those in bold. However, this is not considered to be significant because: 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;

- Soil replicates, rather than homogenised soil duplicates, were used to minimise the risk of possible volatile loss, hence greater variability can be expected;
- Most of the recorded concentrations being relatively close to the LOR/PQL. High RPD values reflect the low concentrations;
- The majority of RPDs within a replicate pair being within the acceptable limits; and
- All other QA/QC parameters met the DQIs.

Overall, the intra-laboratory replicate comparisons indicate that the sampling techniques were generally consistent and repeatable.

Q2.1.1 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.

Note that, where both samples are below LOR/PQL the difference and RPD has been given as zero. Where one sample is reported below LOR/PQL, but a concentration is reported for the other, the LOR/PQL value has been used for calculation of the RPD for the less than LOR/PQL sample.

The calculated RPD values were within the acceptable range of ± 30 for inorganic analytes and ± 50% for organics with the exception of those shaded and in bold. However, this is not considered to be significant because:

- 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;
- The number of replicate pairs being collected from fill soils which were heterogeneous in nature;

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

The overall inter-laboratory replicate comparisons indicate that the sampling technique was generally consistent and repeatable and 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.

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**

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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

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	-	9/17/2019	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	-	9/17/2019	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 (% Recovery)

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

Appendix E

Descriptive Notes

Borehole Logs

Groundwater Field Sheets

Gas Field Sheets

EPA Environment Protection Licenses, POEO Public Register

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

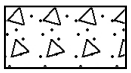
Symbols & Abbreviations

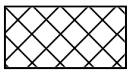
Graphic Symbols for Soil and Rock

General

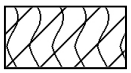

Asphalt

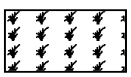

Road base

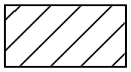

Concrete

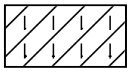

Filling

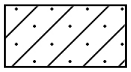
Soils


Topsoil

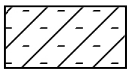

Peat

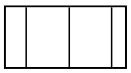

Clay

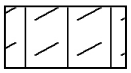

Silty clay

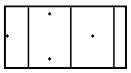

Sandy clay

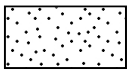

Gravelly clay

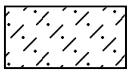

Shaly clay

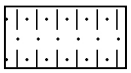

Silt


Clayey silt


Sandy silt

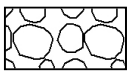

Sand

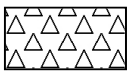

Clayey sand


Silty sand


Gravel

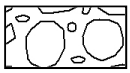

Sandy gravel


Cobbles, boulders

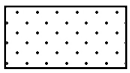

Talus

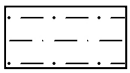
Sedimentary Rocks

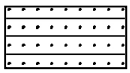

Boulder conglomerate

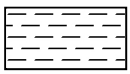

Conglomerate


Conglomeratic sandstone

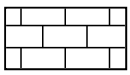

Sandstone


Siltstone

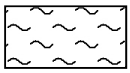

Laminite

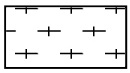

Mudstone, claystone, shale

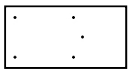

Coal


Limestone

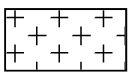
Metamorphic Rocks

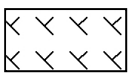

Slate, phyllite, schist

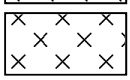

Gneiss

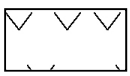

Quartzite

Igneous Rocks


Granite


Dolerite, basalt, andesite


Dacite, epidote


Tuff, breccia


Porphyry

BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 52.6 AHD
EASTING: 301418
NORTHING: 6256008
DIP/AZIMUTH: 90°/--

BORE No: BH1
PROJECT No: 84822
DATE: 5/5/2015
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
52.6	0.0	FILLING - brown, silty clay filling with a trace of concrete, brick, slag, rootlets and sandstone gravel, moist		A/E	0.0 0.1		PID=2.0		
				A/E	0.4 0.5		PID=2.0		
	0.5	SILTY CLAY - firm to stiff, brown, silty clay with a trace of charcoal and rootlets, moist		S			2,2,2 N = 4		
52	1	0.85m: wet		A/E	0.9 0.95		PID=2.0		1
		1.2m: becoming moist and some charcoal		S	1.0		3,5,7 N = 12		
51				A/E	1.4 1.45 1.5		PID=2.0		
	2								2
		2.3m: some subrounded ironstone gravel		A/E	2.3 2.5		PID=3.0		
50	2.6	SILTY CLAY - firm to stiff, grey and orange-red, silty clay with some charcoal, moist		S			3,3,5 N = 8		
	3			A/E	2.9 2.95 3.0		PID=2.0 PID<1		3
49	3.9	SHALE - extremely low strength, dark grey shale with a trace of ironstaining		S	4.0		30/140mm refusal		
	4								4
48				A/E	4.8		PID<1		
	5	5.0 Bore discontinued at 5.0m - target depth reached			5.0				5
47	6								6
46	7								7
45	8								8
44	9								9
43									

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed. Wet at 0.85m

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 53.6 AHD
EASTING: 301436
NORTHING: 6255929
DIP/AZIMUTH: 90°/--

BORE No: BH2
PROJECT No: 84822
DATE: 6/5/2015
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Degree of Weathering	Graphic Log	Rock Strength	Water	Fracture Spacing (m)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
53	0	SILTY CLAY - very soft, brown, silty clay with a trace of charcoal and rootlets, moist							A/E			PID=1.0
		0.3m: wet							A/E			PID=2.0
									S			0,0,0 N = 0
52	1								A/E			PID=2.0
	1.0	SILTY CLAY - firm to stiff, grey mottled orange, silty clay with a trace of charcoal, rootlets and ironstone gravel, moist							S			3,3,5 N = 8
	2											
51									A/E			PID=2.0
									S			3,3,4 N = 7
	3											
50		3.8m: some ironstone gravel							A/E			PID<1
	4	4.1-4.3m: ironstone gravel band							S			5,5,30/130mm refusal
	4.35	SHALE - extremely low strength, dark grey shale with some ironstaining						Note: Unless otherwise stated, rock is fractured along rough planar bedding dipping 0°- 10°				
49	5											
48	5.7	SHALE - low then medium strength, slightly weathered then fresh, fractured then slightly fractured, dark grey shale interbedded with sandstone and siltstone layers							A/E			PID<1
	6							5.97-5.89m: J70°- 85°, st, sm, cln 6.25m: J80°, un, ro, fe				PL(A) = 0.2
47								6.66m: J30°, un, ro, cln	C	100	81	PL(A) = 0.5
	7											PL(A) = 0.3
46								7.37m: B0°, cly, 5mm 7.45m: J80°, pl, sm, cln				
	8											PL(A) = 0.7
45								8.52m: B0°, Cz, 10mm				
	9							8.85m: B0°, cly co	C	100	100	
44	10.0	Bore discontinued at 10.0m - target depth reached										PL(A) = 0.7

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK/SI **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger to 5.7m; NMLC-Coring to 10.0m

WATER OBSERVATIONS: No free groundwater observed. Wet at 0.3m

REMARKS: Standpipe installed to 10.0m (casing 0-4.5m; screen 4.5-10.0m; gravel 0.0-4.35m; bentonite 4.35-4.5m; gatic cover)

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 54.7 AHD
EASTING: 301427
NORTHING: 6255796
DIP/AZIMUTH: 90°/--

BORE No: BH3
PROJECT No: 84822
DATE: 6/5/2015
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
54.7	0.0			A/E	0.0 - 0.1		PID=2.0		
	0.3	FILLING - brown, clay filling with some fine to coarse sand and a trace of glass, subrounded ironstone gravel and rootlets, moist		A/E*	0.4 - 0.5		PID=2.0		
	0.6	FILLING - brown-red, clay filling with a trace of coarse sand and sandstone cobbles, ironstone gravel, angular igneous gravel and charcoal, moist		A/E	0.9 - 1.0		PID=1.0		
54	1.0	SILTY CLAY - brown, silty clay with a trace of orange clay, ironstone gravel, charcoal, light grey rounded sandstone gravel and rootlets, damp		A/E	1.4 - 1.5		PID=1.0		
53		SILTY CLAY - brown-orange, silty clay with a trace of charcoal and subrounded ironstone gravel, damp							
	2	1.5m: becoming moist							
		2.0m: wet and some angular and subrounded ironstone gravel		A/E	2.4 - 2.5		PID=1.0		
52		2.5m: moist (trace grey clay)							
	3.0			A/E	2.9 - 3.0		PID=1.0		
		Bore discontinued at 3.0m - target depth reached							
51	4								
50	5								
49	6								
48	7								
47	8								
46	9								
45									

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed. Wet at 2.0m

REMARKS: *BD1/060515 collected at 0.4m to 0.5m

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 54.7 AHD
EASTING: 301435
NORTHING: 6255712
DIP/AZIMUTH: 90°/--

BORE No: BH4
PROJECT No: 84822
DATE: 6/5/2015
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
54.7	0.0			A/E	0.0		PID=2.0		Gatic cover
	0.1				0.1				Bentonite
	0.3	FILLING - brown, silty clay filling with a trace of charcoal, rootlets, coarse sand, angular igneous gravel, subrounded ironstone cobbles and grey mottled red clay, damp							
	0.5	FILLING - brown, silty clay filling with a trace of ironstone gravel, charcoal and grey mottled red clay, damp		S	0.5		1,0,0 N = 0		
54	1	SILTY CLAY - very soft, brown, silty clay with a trace of rootlets, charcoal and subrounded ironstone gravel, wet		A/E	0.9		PID=2.0		1 Gravel
	1.2	SILTY CLAY - firm to stiff, grey and orange mottled, silty clay with some ironstone gravel and charcoal, wet		S	0.95		2,3,4 N = 7		
		1.5-2.0m: some charcoal inclusions		A/E*	1.0		PID=2.0		
					1.4		PID=1.0		
53	2	2.0m: becoming brown-orange silty clay with ironstone gravel, wet			1.45				2
				A/E	1.5				
					2.0				
				A/E	2.3		PID=2.0		
	2.5	SILTY CLAY - very stiff, grey and orange, silty clay with some ironstone gravel and charcoal, moist		S	2.5		4,6,11 N = 17		
52	3				2.95				Machine slotted PVC screen 3
	3.5	CLAY - very stiff, brown, grey and orange clay with some rounded ironstone gravel and grey shale fragments, moist							
51	4				4.0				4
	4.0	SHALE - extremely low strength, dark grey and ironstained shale		S	4.34		80,27,30/110mm refusal		
					4.6				
50	5			A/D	5.0		PID<1		5 End cap
	5.0	Bore discontinued at 5.0m - target depth reached							
49	6								6
48	7								7
47	8								8
46	9								9
45									

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed. Wet at 2.0m

REMARKS: *BD2/060515 collected at 0.4m to 0.5m. Standpipe installed to 5.0m

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 53.2 AHD
EASTING: 301364
NORTHING: 6256060
DIP/AZIMUTH: 90°/--

BORE No: BH5
PROJECT No: 84822
DATE: 5/5/2015
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
53	0.0								
	0.3	SILTY CLAY - brown-red, silty clay with a trace of ironstone gravel, moist		A/E	0.0 0.1 0.3		PID=1.0 0.3-1.1m: Bulk sample		
		SILTY CLAY - red-brown, silty clay with a trace of ironstone gravel, moist		A/E	0.4 0.5		PID=1.0		
		0.7m: becoming firm to stiff and a trace of grey mottling		A/E	0.9 1.0		PID=2.0		
52	1.1	SHALY CLAY - brown-grey, shaly clay, humid		A/D	1.2		PID<1		
	1.5	Bore discontinued at 1.5m in shale - target depth reached			1.5				
51	2								
50	3								
49	4								
48	5								
47	6								
46	7								
45	8								
44	9								

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 53.3 AHD
EASTING: 301385
NORTHING: 6255960
DIP/AZIMUTH: 90°/--

BORE No: BH6
PROJECT No: 84822
DATE: 5/5/2015
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
53	0.0	SILTY CLAY - brown, silty clay with a trace of red clay, ironstone gravel and charcoal, moist		A/E	0.0–0.1		PID=2.0		
				A/E*	0.4–0.5		PID=0.5		
		0.6m: wet		S			3,6,7 N = 13		
	0.9								
52	1	SILTY CLAY - grey-brown, silty (slightly shaly) clay, with a trace of charcoal, moist		A/E	0.9–0.95		PID=2.0		
				S	1.0		1,1,0 N = 1		
	1.3	SILTY CLAY - brown-orange, silty clay with a trace of grey clay, moist		A/E	1.4–1.45–1.5		PID=1.0		
51	2								
		2.3m: some charcoal and ironstone gravel		A/E	2.3–2.5		PID<1		
	2.75			S			5,17,30/130mm refusal		
		SHALE - extremely low strength, dark grey shale with some ironstaining			2.95–3.0				
50	3			A/E			PID<1		
	3.5	Bore discontinued at 3.5m - target stratum reached			3.5				
49	4								
48	5								
47	6								
46	7								
45	8								
44	9								

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *BD4/050515 collected at 0.4m to 0.5m

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 57.3 AHD
EASTING: 301379
NORTHING: 6255879
DIP/AZIMUTH: 90°/--

BORE No: BH7
PROJECT No: 84822
DATE: 4/5/2015
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
57	0	FILLING - brown-red, silty clay filling with a trace of concrete, brick, charcoal, ironstone gravel, slag, tile and asphalt, moist		A/E	0.0		PID=1.0		
					0.1				
				A/E	0.4		PID=2.0		
					0.5				
		0.7m: concrete fragment		A/E	0.8		PID=2.0		
56	1				1.0				1
				A/E	1.4		PID=2.0		
					1.5				
		1.8m: wet		A/E	1.9		PID=1.0		
	2				2.0				2
55	2.2	FILLING - brown, silty clay filling with a trace of igneous gravel, moist		A/E	2.3		PID=1.0		
	2.4			A/E	2.4		PID=2.0		
	2.7	FILLING - brown-red, silty clay filling with a trace of concrete, brick and ironstone gravel, moist			2.5				
	3			A/E	2.9		PID=1.0		3
	3.0	SILTY CLAY - brown and grey, silty clay with some shale, wet			3.0				
54		SHALY CLAY - grey mottled orange-brown, shaly clay, moist		A/E	3.4		PID=1.0		
	4				3.5				4
	4.0	Bore discontinued at 4.0m - target stratum reached							
53	5								5
52	6								6
51	7								7
50	8								8
49	9								9
48									

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 55.6 AHD
EASTING: 301399
NORTHING: 6255811
DIP/AZIMUTH: 90°/--

BORE No: BH8
PROJECT No: 84822
DATE: 5/5/2015
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
55	0.2	FILLING - brown-orange, silty clay filling with a trace of subrounded ironstone gravel, moist		A/E	0.0 0.1 0.2		PID=2.0 0.2-1.4m: Bulk sample		
	1	SILTY CLAY - orange-brown, silty clay with a trace of ironstone gravel, moist		A/E*	0.4 0.5		PID=2.0		
54	1.4 1.5	SHALY CLAY - brown-grey, shaly clay with some dark grey shale fragments, moist		A/E	1.4 1.5		PID=2.0		
	2	Bore discontinued at 1.5m - target depth reached							
53	3								
52	4								
51	5								
50	6								
49	7								
48	8								
47	9								
46									

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *BD1/050515 collected at 0.4m to 0.5m

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 60.6 AHD
EASTING: 301385
NORTHING: 6255743
DIP/AZIMUTH: 90°/--

BORE No: BH9
PROJECT No: 84822
DATE: 4/5/2015
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
60.6	0.0	FILLING - brown, fine silty sand and clay filling with some shale fragments and a trace of ironstone cobbles, moist		A/E	0.0 0.1		PID=2.0		
	0.3	FILLING - red-brown and grey, clay filling with a trace of angular igneous gravel, sandstone gravel, ironstone gravel and brick fragments, moist		A/E	0.4 0.5		PID=2.0		
				S			4,6,8 N = 14		
	1			A/E	0.9 0.95		PID=1.0		1
				S	1.0		3,4,4 N = 8		
		1.35m: with a trace of slag gravel			1.45		0,0,0 N = 0		
59		1.4m: wet becoming brown		A/E	1.5 1.6		PID=1.0		
	2								2
58		2.5m: black slag gravel/asphalt?		A/E	2.4 2.5		PID=1.0		
				S			2,2,4 N = 6		
	3			A/E	2.9 2.95 3.0		PID=1.0		3
57	3.7	FILLING - red mottled grey, silty clay with a trace of ironstone gravel, moist		A/E	3.7		PID=1.0		
	4.0	FILLING - stiff, grey mottled red, shaly clay with some ironstone gravel, humid		S	4.0		3,5,7 N = 12		4
56					4.45				
	5								5
	5.0	FILLING - brown, silty clay filling with a trace of grey and red clay and shale (reworked filling)		A/D A/E	5.4 5.5		PID=1.0 PID=1.0		
55	5.7	SHALE - very low strength, dark grey shale		S	5.6		3,12,20 N = 32		
	6				5.9 6.0				6
				A/D			PID<1		
54	6.5	Bore discontinued at 6.5m - target stratum reached			6.5				
	7								7
53									
	8								8
52									
	9								9
51									

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 53.2 AHD
EASTING: 301316
NORTHING: 6256061
DIP/AZIMUTH: 90°/--

BORE No: BH10
PROJECT No: 84822
DATE: 5/5/2015
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
53	0.3	SILTY CLAY - brown mottled red, silty clay with a trace of charcoal and rootlets, moist		A/E*	0.0 0.1		PID=1.0		
		SILTY CLAY - red-brown, silty clay, moist		A/E	0.4 0.5		PID=2.0		
	0.7	Bore discontinued at 0.7m in shale - target stratum reached		S	0.95		5,24,30/50mm refusal		

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *BD3/050515 collected at 0.0m to 0.1m

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 56.3 AHD
EASTING: 301322
NORTHING: 6255956
DIP/AZIMUTH: 90°/--

BORE No: BH11
PROJECT No: 84822
DATE: 5/5/2015
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
56	0.0			A/E	0.0		PID=2.0		
					0.1				
	0.3	FILLING - brown, silty sand and gravel filling with some metal fragments (fine and a trace of concrete, glass, tile), igneous and ironstone gravel, moist			0.3		0.3-1.4m: Bulk sample		
				A/E*	0.4		PID=5.0		
		SILTY CLAY - red-brown, silty clay with a trace of subrounded ironstone gravel and charcoal, moist			0.5				
55	1			A/E	0.9		PID=2.0		1
					1.0				
	1.4	SHALY CLAY - brown-red mottled grey, shaly clay, moist		A/E	1.4		PID=2.0		
					1.5				
	1.7	SHALY CLAY - brown, silty, shaly clay with a trace of red and grey clay, moist							
	2			A/E	1.9		PID=1.0		2
54	2.0	Bore discontinued at 2.0m - target depth reached			2.0				
	3								3
53									
	4								4
52									
	5								5
51									
	6								6
50									
	7								7
49									
	8								8
48									
	9								9
47									

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *BD2/050515 collected at 0.4m to 5.5m

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 56.7 AHD
EASTING: 301327
NORTHING: 6255897
DIP/AZIMUTH: 90°/--

BORE No: BH12
PROJECT No: 84822
DATE: 5/5/2015
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
56	0.2	FILLING - dark brown, gravel, sand and clay filling with a trace of rootlets and concrete fragments, moist		A/E	0.0 0.1		PID=2.0		
		CLAY - very stiff, orange-brown mottled grey, clay with some subrounded ironstone gravel, moist		A/E	0.4 0.5		PID=2.0		
	0.8			S			3,8,15 N = 23		
	1	SHALE - extremely low strength, dark grey shale with some ironstaining		A/E	0.9 0.95		PID=2.0		1
				S	1.0		4,11,18 N = 29		
		1.4m: some charcoal		A/E	1.4 1.45 1.5		PID=2.0		
55	2			A/D	2.0		PID=2.0		2
				A/E	2.3 2.4 2.5		PID=2.0		
		2.5-2.7m: ironstone band		S			4,14,27 N = 41		
54	3				2.9				3
	3.3	SHALE - very low strength, dark grey shale		A/E	3.3		PID=1.0		
	3.5	Bore discontinued at 3.5m - target stratum reached			3.5				
53	4								4
52	5								5
51	6								6
50	7								7
49	8								8
48	9								9
47									

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 60.6 AHD
EASTING: 301346
NORTHING: 6255754
DIP/AZIMUTH: 90°/--

BORE No: BH13
PROJECT No: 84822
DATE: 4/5/2015
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
60	0.3	FILLING - grey mottled red, clay filling with a trace of ironstone gravel, brown coarse sand, sandstone gravel and angular igneous gravel, moist		A/E	0.0 0.1		PID=1.0		
		FILLING - red and brown, clay filling with some brown coarse sand and a trace of igneous gravel, slight odour, moist		A/E	0.4 0.5		PID=2.0		
59	1.2	SILTY CLAY - red, silty clay with a trace of angular ironstone gravel, moist 1.5m: becoming red mottled grey clay, moist		A/E*	1.3 1.5		PID=1.0		
58	2.0	Bore discontinued at 2.0m - target depth reached		A/E	1.9 2.0		PID=1.0		
57									
56									
55									
54									
53									
52									
51									

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *BD1/040515 collected at 1.3m to 1.5m

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 60.7 AHD
EASTING: 301361
NORTHING: 6255699
DIP/AZIMUTH: 90°/--

BORE No: BH14
PROJECT No: 84822
DATE: 4/5/2015
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
60.7	0.0			A/E	0.0		PID=2.0		
					0.1				
	0.3	FILLING - grey-brown mottled orange, silty clay filling with a trace of igneous gravel and shale, moist		A/E	0.4		PID=2.0		
					0.5				
	0.7	FILLING - red-brown mottled grey, filling with some ironstone gravel and a trace of charcoal, moist		A/E	0.7		PID=2.0		
	0.9	FILLING - dark brown, coarse sand filling with some red and grey clay and concrete fragments, moist			0.8		0.9-1.5m: Bulk sample		
					0.9				
	1	FILLING - red clay filling with a trace of grey clay, rounded sandstone gravel, rounded igneous gravel, plastic and brick fragments		A/E	1.4		PID=2.0		
					1.5				
				A/E	1.9		PID=1.0		
	2	2.0m: wet			2.0				
	2.8	CLAY - grey mottled yellow, clay with a trace of ironstone gravel and cobbles, wet							
	3.5	Bore discontinued at 3.5m - target stratum reached		A/E	3.4		PID=1.0		
					3.5				

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 60.2 AHD
EASTING: 301322
NORTHING: 6255803
DIP/AZIMUTH: 90°/--

BORE No: BH15
PROJECT No: 84822
DATE: 4/5/2015
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
60	0.01	FILLING - gravel roadbase		A/E*	0.0 - 0.1		PID=2.0		
	0.4	FILLING - red and grey, silty clay and gravel filling with some coarse brown sand, angular igneous gravel and sandstone gravel, moist 0.2m: brick fragments		A/E	0.3 - 0.4		PID=1.0		
59	1	FILLING - red, clay with a trace of ironstone gravel, moist		A/E	0.9 - 1.0		PID=2.0		1
		1.4m: becoming grey mottled red clay with a trace of concrete, igneous gravel and slag		A/E	1.4 - 1.5		PID=3.0		
	1.7	FILLING - red mottled grey, clay filling with a trace of ironstone gravel and igneous gravel, moist		A/E	1.9 - 2.0		PID=3.0		
58	2			A/E	2.4 - 2.5		PID=5.0		2
	2.5	SHALY CLAY - red mottled grey, shaly clay with a trace of ironstone gravel, moist							
	2.9	SHALE - extremely low to very low strength, dark grey shale		A/E	2.9 - 3.0		PID=4.0		
57	3			A/D	3.3 - 3.5		PID=2.0		3
	3.5	Bore discontinued at 3.5m - target depth reached							
56	4								4
55	5								5
54	6								6
53	7								7
52	8								8
51	9								9

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *BD2/040515 collected at 0.0 to 0.1m

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 60.8 AHD
EASTING: 301320
NORTHING: 6255737
DIP/AZIMUTH: 90°/--

BORE No: BH16
PROJECT No: 84822
DATE: 4/5/2015
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
60.8	0.0	FILLING - brown, rounded fine gravel filling with some silty coarse sand and a trace of angular igneous gravel, moist		A/E	0.0 0.1		PID=1.0		
60.4	0.4	0.25m: sandstone cobbles		A/E	0.4 0.5		PID=2.0		
		CLAY - stiff, red mottled brown and grey, clay with a trace of ironstone gravel, moist		S			2,5,5 N = 10		
				A/E	0.9 0.95		PID=2.0		
				S*	1.0		2,6,6* refusal		
		1.3m: becoming grey mottled red clay, firm to stiff, moist		E	1.4 1.45		PID=2.0		
				S	1.5		0,3,5 N = 8		
					1.95				
				A/D			PID=1.0		
58.4	2.4	SHALY CLAY - hard, grey mottled red, shaly clay, humid		A/D	2.4 2.5		PID=1.0		
58.0	2.8			S			70/30mm refusal		
		SHALE - extremely low strength, grey shale			3.0				
57.3	3.5	Bore discontinued at 3.5m - target stratum reached			3.5				

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Estimated blow counts - winch withholding blows

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 51.7 AHD
EASTING: 301250
NORTHING: 6256058
DIP/AZIMUTH: 90°/--

BORE No: BH17
PROJECT No: 84822
DATE: 4/5/2015
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
51	0.3	SILTY CLAY - brown, silty clay with a trace of fine to medium sand and rootlets, moist		A/E	0.0 0.1		PID=2.0		
		SILTY CLAY - stiff, brown and red, silty clay with a trace of ironstone gravel, moist		A/E	0.4 0.5		PID=2.0		
		0.75m: increased grey mottling		S			3,7,7 N = 14		
1				A/E	0.9 0.95		PID=2.0		1
	1.2	SHALE - very low strength, grey shale with some ironstaining		S	1.0		2,9,19 N = 28		
50				A/E	1.4 1.45		PID<1		
				A/D	1.5 1.7 1.9		PID=1.0		
2	2.1	Bore discontinued at 2.1m in shale - target stratum reached							2
49									
3									3
48									
4									4
47									
5									5
46									
6									6
45									
7									7
44									
8									8
43									
9									9
42									

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 56.3 AHD
EASTING: 301257
NORTHING: 6255954
DIP/AZIMUTH: 90°/--

BORE No: BH18
PROJECT No: 84822
DATE: 30/4/2015
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
56	0.25	FILLING - gravel and sand filling with a trace of slag, moist		E	0.0 0.1		PID=2		
		CLAY - red and brown, clay with a trace of charcoal and rounded ironstone gravel, humid		E	0.4 0.5		PID=1		
55	1	1.0m: damp, becoming red		E	0.9 1.0		PID=1		
	1.5	Bore discontinued at 1.5m - target depth reached							
54	2								
53	3								
52	4								
51	5								
50	6								
49	7								
48	8								
47	9								

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 58.1 AHD
EASTING: 301254
NORTHING: 6255866
DIP/AZIMUTH: 90°/--

BORE No: BH19
PROJECT No: 84822
DATE: 30/4/2015
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
58	0.2	FILLING - grey-brown, gravel and sand filling with a trace of slag, moist		E	0.0 0.1		PID=3		
	0.6	FILLING - red-brown, clay filling with a trace of rounded igneous gravel, humid		E* E	0.5 0.6		PID=2 PID=2		
	0.8	SILTY CLAY - red silty clay, dry, humid			0.8				
57	1	SILTY CLAY - grey mottled orange silty clay, humid							1
		1.7m: possibly weathered shale		E	1.8		PID=1		
56	2.0	Bore discontinued at 2.0m - target depth reached			2.0				2
55	3								3
54	4								4
53	5								5
52	6								6
51	7								7
50	8								8
49	9								9

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: *BD4-300415 collected at 0.5m to 0.6m

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 60.2 AHD
EASTING: 301254
NORTHING: 6255805
DIP/AZIMUTH: 90°/--

BORE No: BH20
PROJECT No: 84822
DATE: 30/4/2015
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
60	0	FILLING - brown and red, silty clay filling with a trace of charcoal, angular igneous gravel and ironstone gravel, moist							D/E			PID=2
		0.65m: becoming grey-yellow							E			PID=2 3,7,11 N = 18
59	1								S			PID=3
	1.15	SILTY CLAY - very stiff, grey mottled orange, silty clay with a trace of organic material, humid							E			PID=2 1,8,17 N = 25
	1.3	SHALE - extremely low strength, grey mottled orange shale						Note: Unless otherwise stated, rock is fractured along rough planar bedding dipping 0°- 10°	S S S			PID=2 PID=2 10,10,30 N = 40 PID=4
58	2											
	2.5	SHALE - extremely low strength, extremely weathered, light grey-brown shale							C	100	25	
	2.93	SHALE - low to medium and medium strength, moderately and slightly weathered, slightly fractured, light grey-brown and dark grey shale						3.05m: J30°, pl, sm, cln 3.1m: J60°, he				PL(A) = 0.3
57	3							3.5-3.53m: Cs 3.67m: J35°, pl, ro, cly				PL(A) = 0.3
								4.14 & 4.25m: J's 70°, pl, ro, fe	C	100	87	
56	4							4.66m: J20° & 30°, st, ro, fe				PL(A) = 0.4
								5.02m: J70°, un, ro, fe				
55	5							5.45-5.73m: B's 0°- 5°, fe				PL(A) = 0.3
												PL(A) = 0.4
54	6							6.22 & 6.4m: B0°, cly, 10mm	C	100	95	PL(A) = 0.5
53	7							7.3-7.35m: Cs				PL(A) = 0.3
	7.25	SHALE - low and low to medium strength, slightly weathered, slightly fractured, dark grey shale with some carbonaceous shale bands						7.8m: J45° & 70°, st, sm, cly	C	100	100	
52	8							8.3m: J60°, pl, ro, cln				PL(A) = 0.2
	8.55	INTERBEDDED SHALE/SILTSTONE - medium and high strength, fresh, slightly fractured and unbroken, grey, interbedded shale/siltstone							C	100	100	PL(A) = 1.2
51	9							9.5-10.15m: B (x3) 0°- 5°, cly, 20-5mm				PL(A) = 1.7

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK/SI **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger to 2.5m; NMLC-Coring to 10.0m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: Standpipe installed to 10.0m (casing 0.0-1.5m; screen 1.5-10.0m; gravel 1.0-10.0m; bentonite 0.0-1.0m; gatic cover)

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Stockland Development Pty Ltd
PROJECT: Proposed Warehouse Development
LOCATION: 339 Wallgrove Road, Eastern Creek

SURFACE LEVEL: 60.2 AHD
EASTING: 301254
NORTHING: 6255805
DIP/AZIMUTH: 90°/--

BORE No: BH20
PROJECT No: 84822
DATE: 30/4/2015
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering (EW HW MW SW FS FR)	Graphic Log	Rock Strength (Ex Low, Very Low, Low, Medium, High, Very High, Ex High)	Water	Fracture Spacing (m) (0.01, 0.05, 0.10, 0.50, 1.00)	Discontinuities (B - Bedding J - Joint S - Shear F - Fault)	Sampling & In Situ Testing: Type	Core Rec. %	RQD %	Test Results & Comments
									C	100	100	PL(A) = 0.8
50	10.25	Bore discontinued at 10.25m										
49	11											
48	12											
47	13											
46	14											
45	15											
44	16											
43	17											
42	18											
41	19											

RIG: DB520 **DRILLER:** Numac **LOGGED:** VK/SI **CASING:** Uncased

TYPE OF BORING: 100mm diameter solid flight auger to 2.5m; NMLC-Coring to 10.0m

WATER OBSERVATIONS: No free groundwater observed whilst augering

REMARKS: Standpipe installed to 10.0m (casing 0.0-1.5m; screen 1.5-10.0m; gravel 1.0-10.0m; bentonite 0.0-1.0m; gatic cover)

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Surface Sample Log

Sample ID / Location	Description	PID Reading
S1	Brown silty clay filling with a trace of rootlets and medium sand	3.0
S2	Brown silty clay filling. Red silty clay filling from 0.05 m with a trace of igneous angular gravel.	3.0
S3	Brown sand and clay filing with a trace of igneous gravel. Grey shaly clay filling from 0.05m.	1.0
S4	Grey silty clay and some shale filling and a trace of igneous gravel. Slight organic odour.	1.0
S5	Brown clayey filling with some fine to coarse sand and a trace of glass, foil and bone.	2.0
S6	Brown gravel and silty sand filling. Auger refusal on gravel at 0.05 m.	1.0
S7	Dark brown gravel with some silty fine sand	1.0
S8	Brown silty and sandy clay filling	1.0
S9	Brown clayey fine to coarse sand filling	3.0
S10	Brown silty sand and gravel filling	2.0
S11	Brown silty sand and gravel filling	1.0
S12	Brown gravel filling with a trace of coarse sand	2.0
S13	Red mottled grey clay filling with some brown silty sand and gravel filling and a trace of rootlets	2.0
S14	Dark brown gravel filling with a trace of sand and slag	2.0
S15	Brown and grey clay filling with a trace of grey shale and fine to coarse sand	1.0
S16	Light brown silty sandy filling. Reworked lightweight filling associated with poultry activity?	10.0
S17	Brown silty clay filling with some angular igneous gravel.	2.0

Note: All surface sample collections between 0-0.15 m and within filling.

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 52.3 AHD
EASTING: 301269.3
NORTHING: 6256067
DIP/AZIMUTH: 90°/--

BORE No: BH201
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
52	0.0	FILL/Silty CLAY CI: medium plasticity, orange-brown, with fine to medium igneous gravels, trace rootlets, w < pl, firm to stiff		E*	0.0–0.2		PID = 1 ppm		Concrete; Bentonite
51	0.5	Silty CLAY CI-CH: medium to high plasticity, red-brown, w < PL, firm to stiff, residual		E	0.8–1.0		PID = 1 ppm		
50	1.3	Silty CLAY CI-ML: low to medium plasticity, yellow-brown, w < PL, soft, residual/extremely low strength siltsone							
49	3.0	SHALE: low to medium strength, grey, Bringelly Shale							Gravel
47	5.4	Bore discontinued at 5.4m; Auger refusal, Limit of Investigation							Bentonite

RIG: Scout **DRILLER:** JE (GT) **LOGGED:** JJH **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56. * BD1/20190916 taken at 0-0.2m. Well completed with 0.5m stickup and monument cover.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 54.5 AHD
EASTING: 301271.6
NORTHING: 6256015.5
DIP/AZIMUTH: 90°/--

BORE No: BH202
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
54	0.0			E	0.0–0.2		PID = 1 ppm		
	0.3	FILL/Sandy GRAVEL SW: fine to medium, grey, fine to coarse sand, dry							
				E	0.4–0.5		PID = 2 ppm		
	0.6	FILL/CLAY CL-CI: low to medium plasticity, grey-brown, with silt, trace fine to medium igneous gravels and ceramics, w < PL							
	1			E	0.9–1.0		PID = 1 ppm		
	1.2	Silty CLAY CI-CH: medium to high plasticity, red-brown, w < PL, firm to stiff, residual							
53	1.5	Silty CLAY CI-ML: low to medium plasticity, yellow-brown, w < PL, soft, residual/extremely low strength siltsone							
		Bore discontinued at 1.5m; Target depth reached							
52	2								
51	3								
50	4								
49	5								
48	6								
47	7								
46	8								
45	9								

RIG: Scout **DRILLER:** JE (GT) **LOGGED:** JJH **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 54.9 AHD
EASTING: 301341
NORTHING: 6256021.6
DIP/AZIMUTH: 90°/--

BORE No: BH203
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
54	0.0	FILL/Sandy GRAVEL SW: fine to medium, grey, fine to coarse sand, dry		E	0.0 - 0.2		PID = 1 ppm		
	0.3	FILL/CLAY Cl: medium plasticity, orange-brown, with silt, w < PL		E	0.4 - 0.5		PID = 1 ppm		
	0.7	Silty CLAY Cl-CH: medium to high plasticity, mottled orange and brown, w < PL, firm to stiff, residual		E	0.9 - 1.0		PID < 1 ppm		
	1								1
	1.5	Bore discontinued at 1.5m; Target depth reached							
53	2								2
52	3								3
51	4								4
50	5								5
49	6								6
48	7								7
47	8								8
46	9								9
45									

RIG: Scout **DRILLER:** JE (GT) **LOGGED:** JJH **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 52.3 AHD
EASTING: 301421.1
NORTHING: 6256055.9
DIP/AZIMUTH: 90°/--

BORE No: BH204
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
52	0.0	FILL/Silty CLAY CL-Cl: low to medium plasticity, brown-orange mottled grey, w < PL		E	0.0–0.2		PID < 1 ppm		Concrete
				E	0.4–0.5		PID < 1 ppm		Bentonite
	0.8	FILL/Silty CLAY CL-Cl: low to medium plasticity, brown, w < PL		E	0.8–1.0		PID = 1 ppm		
51	1.1	Silty CLAY Cl: medium plasticity, red-brown, w < PL, soft, residual		E	1.4–1.5		PID < 1 ppm		
50	2.8	Silty CLAY Cl: medium plasticity, yellow-brown, w ~ PL, firm, residual							
49		4.20m: w > PL							
48	4.8	SHALE: brown-grey, low to medium strength, Bringelly Shale							Gravel
47		5.30m: grading grey							
46		6.80m: medium strength						▼	
45									
44	8.1	Bore discontinued at 8.1m; Auger refusal, Limit of Investigation							Bentonite
43									

RIG: Scout **DRILLER:** JE (GT) **LOGGED:** JJH **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: Groundwater observed at ~ 7.5m

REMARKS: Location coordinates are in MGA94 Zone 56. Well completed with 0.5m stickup and monument cover.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 56.3 AHD
EASTING: 301345.3
NORTHING: 6255923.4
DIP/AZIMUTH: 90°/--

BORE No: BH205
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
56	0.0			E	0.0 - 0.2		PID = 1 ppm		
	0.3	FILL/Gravelly SAND GW: fine to coarse, grey-brown, fine to medium igneous gravels, with clay, dry							
				E	0.4 - 0.5		PID = 1 ppm		
	0.7	FILL/Silty CLAY Cl: medium plasticity, orange-brown mottled grey, w < PL							
	1			E	0.9 - 1.0		PID = 2 ppm		1
	1.2	FILL/Clay Cl-CH: medium plasticity, brown mottled orange-red, w ~ PL (possibly natural)							
55				E	1.4 - 1.5		PID = 2 ppm		
	1.6	CLAY Cl: medium plasticity, orange-red mottled grey, w < PL, firm to stiff, residual							
	2								2
	2.0	Silty CLAY Cl-ML: low to medium plasticity, yellow-brown, w < PL, soft, residual/extremely low strength siltsone							
54		Bore discontinued at 2.0m; Target depth reached							
	3								3
53									
	4								4
52									
	5								5
51									
	6								6
50									
	7								7
49									
	8								8
48									
	9								9
47									

RIG: Scout **DRILLER:** JE (GT) **LOGGED:** JJH **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56. * BD2/20190916 taken at 0.4-0.5m

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 57.7 AHD
EASTING: 301381.1
NORTHING: 6255846.2
DIP/AZIMUTH: 90°/--

BORE No: BH206
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
57	0.0	FILL/Gravelly SAND: fine to coarse, brown, fine to medium gravels, with silt, dry		E	0.0 - 0.2		PID = 1 ppm		
	0.3	FILL/Silty CLAY CL-CI: low to medium plasticity, brown-grey mottled red, with fine to medium gravels, w < PL		E	0.4 - 0.5		PID = 1 ppm		
	0.6	FILL/Silty CLAY CI: medium plasticity, brown, w < PL		E	0.9 - 1.0		PID = 2 ppm		
56	1.2	FILL/Silty CLAY CI: medium plasticity, red-orange mottled grey, trace fine sandstone and igneous gravels, w < PL		E	1.4 - 1.5		PID = 2 ppm		
				E	1.9 - 2.0		PID < 1 ppm		
	2.2	FILL/Silty CLAY CI: medium plasticity, orange-brown, w < PL		E	2.4 - 2.5		PID < 1 ppm		
55	2.6	CLAY CI: medium plasticity, orange-red mottled grey, w < PL, firm to stiff, residual		E	2.8 - 3.0		PID< 1 ppm		
54	3.7	Silty CLAY CI-ML: low to medium plasticity, yellow-brown, w < PL, soft, residual/extremely low strength siltsone							
	4.0	Bore discontinued at 4.0m; Target depth reached							

RIG: Scout **DRILLER:** JE (GT) **LOGGED:** JJH **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 58.4 AHD
EASTING: 301355.6
NORTHING: 6255815.9
DIP/AZIMUTH: 90°/--

BORE No: BH207
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
58	0.0	FILL/Silty CLAY CL: low plasticity, brown, with fine to medium gravels, trace brick fragments, w < PL		E	0.0 0.2		PID = 1 ppm		
				E*	0.4 0.5		PID = 2 ppm		
	0.7	CLAY CI-CH: medium to high plasticity, mottled orange and yellow-brown , w < PL, firm, residual		E	0.8 1.0		PID < 1 ppm		
57	1			E	1.4 1.5		PID < 1 ppm		
	2								
56	2.2	CLAY CI: medium plasticity, orange-red mottled grey, with silt, w < PL, firm to stiff, residual							
	2.5	Bore discontinued at 2.5m; Target depth reached							
55	3								
54	4								
53	5								
52	6								
51	7								
50	8								
49	9								

RIG: Scout **DRILLER:** JE (GT) **LOGGED:** JJH **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56. * BD3/20190916 taken at 0.4-0.5m

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 56.9 AHD
EASTING: 301294.1
NORTHING: 6255893.9
DIP/AZIMUTH: 90°/--

BORE No: BH208
PROJECT No: 84822.02
DATE: 23/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
56	0.0			E*	0.0		PID < 1 ppm		Concrete
	0.2	FILL/Silty CLAY CL: low plasticity; dark brown-grey, with sand, trace rootlets, w < PL		E	0.2		PID< 1 ppm		
	0.5	FILL/ Silty CLAY CL-Cl: low to medium plasticity; brown mottled grey, with fine gravels, w < PL		E	0.3 0.5		PID< 1 ppm		Bentonite
	0.7	FILL/ Silty CLAY Cl: medium plasticity; red mottled grey, with fine gravels, w < PL		E	0.6 0.9		PID< 1 ppm		
	1.0				1.0				
	1.15	Silty CLAY Cl-ML: low to medium plasticity, yellow-brown, w < pl, soft, residual/extremely low strength siltsone			1.15				
55	2.0	SHALE: fine to medium grained, laminated, brown-grey, apparently low to medium strength, moderately weathered to highly weathered, fractured to highly fractured, Bringelly Shale 2.25-2.50m: highly fractured, with grey mottled brown clay band							
54	3.0								
53	4.0	4.20-4.40m: medium to coarse grained							
52	5.0	4.75-5.00m: very low strength, with brown clay band							Gravel
	5.1	SHALE: fine grained, thinly laminated, grey, apparently medium to high strength, slightly to moderatly weathered, fractured, Bringelly Shale		C					
51	6.0	6.15m: becoming slightly fractured							
50	7.0	7.54-6.00m: apparently low strength, with grey-brown clay band							
49	8.0								
48	9.0								
47	10.0				10.0				Bentonite

Bore discontinued at 10.0m; Target Depth reached

RIG: Bobcat **DRILLER:** JE (GT) **LOGGED:** JJH **CASING:** HQ to 1.2m

TYPE OF BORING: Auger to 1.15m, NMLC Coring to 10m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56. * BD1/ 20190923 Taken at 0 - 0.2m, Well completed with 0.5m stickup and monument cover.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 58.2 AHD
EASTING: 301262.6
NORTHING: 6255858.1
DIP/AZIMUTH: 90°/--

BORE No: BH209
PROJECT No: 84822.02
DATE: 20/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
58	0.25	FILL/ Sandy CLAY CL: low plasticity, grey-brown, with fine to medium gravels (shale and igneous), w < PL		E	0.0 0.2		PID < 1 ppm		
	0.5	CLAY: medium plasticity, red-orange and mottled grey, w < PL, firm to stiff, residual		E	0.4 0.5		PID< 1 ppm		
		Bore discontinued at 0.5m; Auger refusal							
57	1								
56	2								
55	3								
54	4								
53	5								
52	6								
51	7								
50	8								
49	9								

RIG: Hand Tools **DRILLER:** JJH **LOGGED:** JJH **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 60.8 AHD
EASTING: 301309.3
NORTHING: 6255771.4
DIP/AZIMUTH: 90°/--

BORE No: BH210
PROJECT No: 84822.02
DATE: 20/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
60.8	0.0			E*	0.0		PID < 1 ppm		
	0.2	FILL/ CLAY CL-CI: low to medium plasticity, red-brown mottled and grey, with sand, silt and fine to medium igneous gravels, w ~PL			0.2				
	0.4	FILL/ Silty CLAY CL-CI: low to medium plasticity, brown, with silt, w < PL		E	0.4 0.5		PID< 1 ppm		
	0.7			E	0.7 0.8		PID< 1 ppm		
	0.9	CLAY CI: medium plasticity, red-brown mottled and yellow-brown, with silt, trace fine ironstone gravels, w < pl, firm, residual							
		Bore discontinued at 0.6m; Auger refusal							

RIG: Hand Tools **DRILLER:** JJH **LOGGED:** JJH **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56. * BD1/20190920 taken at 0-0.2m

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 60.5 AHD
EASTING: 301361.8
NORTHING: 6255774.9
DIP/AZIMUTH: 90°/--

BORE No: BH211
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
60.5	0.0			E	0.0		PID < 1 ppm		
	0.2				0.2				
	0.3	FILL/Sandy GRAVEL GW: fine to medium, red-brown mottled grey, fine to coarse sand, with silt, dry		E	0.4		PID < 1 ppm		
	0.5				0.5				
	0.7	FILL/Silty CLAY CL-CI: low to medium plasticity, brown mottled grey, trace fine to medium igneous gravels and sand, stiff							
59.5	1	FILL/Silty CLAY CI: medium plasticity, grey-brown mottled orange, with fine gravels, w < PL		E	0.9 1.0		PID < 1 ppm		1
	1.6			E	1.6 1.7		PID = 1 ppm		
58.5	2	FILL/CLAY CI-CH: medium to high plasticity, red-brown mottled grey, with silt, w < PL 1.80m: grading grey		E	1.9 2.0		PID = 1 ppm		2
	2.2	FILL/CLAY CI-CH: medium to high plasticity, red-orange mottled grey, with silt, w < pl, soft to firm, residual							
57.5	3								3
	3.0	Bore discontinued at 3.0m; Target depth reached							
56.5	4								4
55.5	5								5
54.5	6								6
53.5	7								7
52.5	8								8
51.5	9								9

RIG: Scout **DRILLER:** JE (GT) **LOGGED:** JJH **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 60.4 AHD
EASTING: 301392.5
NORTHING: 6255708.4
DIP/AZIMUTH: 90°/--

BORE No: BH212
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
60.4	0.0			E	0.0		PID < 1 ppm		
					0.2				
60.1	0.3	FILL/Silty CLAY CL-CI: low to medium plasticity, brown mottled orange-grey, with fine to coarse gravels, w < PL		E	0.4		PID = 1 ppm		
					0.5				
		FILL/Silty CLAY CI: medium plasticity, brown-red mottled grey, trace fine gravels, w < PL							
				E	0.9		PID = 1 ppm		
	1				1.0				1
59.2	1.2	FILL/Silty CLAY CI: medium plasticity, red-brown and grey mottled, w < PL							
				E	1.4		PID = 1 ppm		
					1.5				
	2			E	1.9		PID < 1 ppm		2
					2.0				
58.3	2.1	FILL/Silty CLAY CI: medium plasticity, brown-grey, w ~ PL							
				E	2.4		PID < 1 ppm		
57.9	2.5	Bore discontinued at 2.5m due to site access restrictions			2.5				
	3								3
	4								4
	5								5
	6								6
	7								7
	8								8
	9								9

RIG: Scout **DRILLER:** JE (GT) **LOGGED:** JJH **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 54.5 AHD
EASTING: 301430.6
NORTHING: 6255809.6
DIP/AZIMUTH: 90°/--

BORE No: BH213
PROJECT No: 84822.02
DATE: 18/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
54	0.0	FILL/CLAY CL-CI: low to medium plasticity, brown, with sand, rootlets fine to coarse gravels, trace silt and plastics (PVC pipe fragments)		E	0.0		PID < 1 ppm		Concrete
					0.2				
				E*	0.4		PID < 1 ppm		
	0.6				0.5				Bentonite
		FILL/Silty CLAY CL-CI: low to medium plasticity, red-brown							
	1			E	0.9		PID < 1 ppm		1
	1.2				1.0				
53		CLAY CI: medium plasticity, yellow-brown and red mottled, firm to stiff, residual		E	1.4		PID < 1 ppm		
					1.5				
	2								2
	2.0	Silty CLAY CI-ML: low to medium plasticity, yellow-brown, soft, residual/extremely low strength siltsone							
	2.2								
52		SHALE: grey, low to medium strength, Bringelly Shale		E	2.4		PID < 1 ppm		
					2.5				
	3								Gravel
51									3
	4								4
50	4.5	Bore discontinued at 4.5m; Auger refusal, LOI							Bentonite
	5								5
49									
	6								6
48									
	7								7
47									
	8								8
46									
	9								9
45									

RIG: Bobcat **DRILLER:** JE (GT) **LOGGED:** JJH **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56. * BD1/20190918 taken at 0.4-0.5m; heavy rain during drilling, no certainty of soil moisture content and groundwater levels. Well completed with 0.5m stickup and monument cover.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 57.9 AHD
EASTING: 301350.7
NORTHING: 6255855.1
DIP/AZIMUTH: 90°/--

BORE No: BH214
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
57.9	0.2	FILL/SAND SP: coarse, pale brown, trace gravels, feathers and manure, dry		E	0.1		PID < 1 ppm		
					0.2				
	0.5	CLAY CL-Cl: low to medium plasticity, pale brown mottled grey, w < PL, soft, residual		E*	0.3		PID < 1 ppm		
					0.4				
		Bore discontinued at 0.5m; Target depth reached							

RIG: Hand Tools **DRILLER:** JS **LOGGED:** JS **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56. * BD1A/20190916 taken at 0.3-0.4m

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 58.1 AHD
EASTING: 301286.8
NORTHING: 6255851.9
DIP/AZIMUTH: 90°/--

BORE No: BH215
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
58	0.2	FILL/CLAY CL-CI: low to medium plasticity, dark brown, trace sand, manure and bone fragments, w < PL		E	0.1		PID = 1 ppm		
				E	0.2		PID = 2 ppm		
	0.5	CLAY CL-CI: low to medium plasticity, pale brown mottled grey and red, w < PL			0.3				
		0.40m: trace gravels							
57	1	Bore discontinued at 0.5m; Target depth reached							
56	2								
55	3								
54	4								
53	5								
52	6								
51	7								
50	8								
49	9								

RIG: Hand Tools **DRILLER:** JS **LOGGED:** JS **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 56.4 AHD
EASTING: 301247
NORTHING: 6255934.2
DIP/AZIMUTH: 90°/--

BORE No: BH216
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
56	0.3	FILL/SAND SW: fine to coarse, dark grey, trace gravels, rootlets, dry (roadbase)		E	0.1		PID < 1 ppm		
	0.5	CLAY CL-CI: low to medium plasticity, dark brown mottled grey, w < PL		E	0.2 0.3		PID < 1 ppm		
		Bore discontinued at 0.5m; Auger refusal			0.4				
55	1								1
54	2								2
53	3								3
52	4								4
51	5								5
50	6								6
49	7								7
48	8								8
47	9								9

RIG: Hand Tools **DRILLER:** JS **LOGGED:** JS **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 60.3 AHD
EASTING: 301311.4
NORTHING: 6255800.7
DIP/AZIMUTH: 90°/--

BORE No: BH217
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
60	0.2	FILL/SAND SW: fine to medium, pale brown, trace gravels, rootlets, dry		E	0.1		PID = 1 ppm		
				E	0.2		PID < 1 ppm		
	0.4	FILL/SAND SW: fine to medium, dark grey mottled pale grey, trace gravels, rootlets, brick and plastics, moist			0.3				
	0.6			E	0.5		PID < 1 ppm		
	0.7	FILL/CLAY CL-CI: low to medium plasticity, pale brown mottled yellow, trace charcoal, w < pl		E	0.6		PID < 1 ppm		
59	1	CLAY CL-CI: low to meidum plasticity, yellow mottled pale brown, w < pl, firm, residual			0.7				
		Bore discontinued at 0.7m; Target depth reached							
58	2								
57	3								
56	4								
55	5								
54	6								
53	7								
52	8								
51	9								

RIG: Hand Tools **DRILLER:** JS **LOGGED:** JS **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 58.0 AHD
EASTING: 301279
NORTHING: 6255890.8
DIP/AZIMUTH: 90°/--

BORE No: BH218
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
58	0.1	CONCRETE		E	0.1		PID < 1 ppm		
	0.3	FILL/SAND SW: medium to coarse, dark grey, trace gravel, dry (roadbase)		E	0.2		PID < 1 ppm		
	0.5	CLAY CL-CI: low to medium plasticity, dark brown mottled grey, w < pl, firm, residual			0.3				
57	1	Bore discontinued at 0.5m; Target depth reached			0.4				
56	2								
55	3								
54	4								
53	5								
52	6								
51	7								
50	8								
49	9								

RIG: Hand Tools **DRILLER:** JS **LOGGED:** JS **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 56.5 AHD
EASTING: 301292.3
NORTHING: 6255921.7
DIP/AZIMUTH: 90°/--

BORE No: BH219
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
56	0.1	CONCRETE		E	0.1		PID < 1 ppm		
		CLAY CL-CI: low to medium plasticity, pale brown mottled dark brown clay, w < pl, soft to firm, residual		E	0.2		PID = 1 ppm		
	0.5	Bore discontinued at 0.5m; Target depth reached			0.3				
					0.4				
55	1								
54	2								
53	3								
52	4								
51	5								
50	6								
49	7								
48	8								
47	9								

RIG: Hand Tools **DRILLER:** JS **LOGGED:** JS **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 56.3 AHD
EASTING: 301314
NORTHING: 6255941.1
DIP/AZIMUTH: 90°/--

BORE No: BH220
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
56	0.1	CONCRETE		E	0.1		PID < 1 ppm		
	0.2			E	0.2		PID < 1 ppm		
	0.3	FILL/SAND SP: coarse, dark brown, trace gravel and crushed brick fragments, dry to moist		E	0.3		PID < 1 ppm		
	0.5				0.4				
		FILL/CLAY CL-CI: low to medium plasticity, dark grey mottled light brown, trace gravels, moist, hydrocarbon odour			0.5				
55	1	CLAY CL-CI: low to medium plasticity, light brown mottled grey, w < pl, firm, residual							
		Bore discontinued at 0.5m; Target depth reached							
54	2								
53	3								
52	4								
51	5								
50	6								
49	7								
48	8								
47	9								

RIG: Hand Tools **DRILLER:** JS **LOGGED:** JS **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 60.8 AHD
EASTING: 301289.2
NORTHING: 6255790.4
DIP/AZIMUTH: 90°/--

BORE No: BH221
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
60.8	0.3	FILL/SAND SP: coarse, pale brown, trace gravels and rootlets, dry to moist		E	0.1 0.2		PID < 1 ppm		
60.5	0.5	CLAY CL-CI: low to medium plasticity, pale brown mottled pale grey, w < pl, firm, residual		E	0.4 0.5		PID < 1 ppm		
		Bore discontinued at 0.5m; Target depth reached							

RIG: Hand Tools **DRILLER:** JS **LOGGED:** JS **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 61.0 AHD
EASTING: 301289
NORTHING: 6255761.1
DIP/AZIMUTH: 90°/--

BORE No: BH222
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
61	0.15	FILL/SAND SP: coarse, dark brown, trace feathers, bones, manure and rootlets, dry		E	0.0		PID < 1 ppm		
				E	0.1		PID < 1 ppm		
	0.5	CLAY CL-CI: low to medium plasticity, pale brown, w < pl, firm, residual			0.2				
		Bore discontinued at 0.5m; Auger refusal			0.3				
60	1								
59	2								
58	3								
57	4								
56	5								
55	6								
54	7								
53	8								
52	9								

RIG: Hand Tools **DRILLER:** JS **LOGGED:** JS **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 60.9 AHD
EASTING: 301251.1
NORTHING: 6255758.2
DIP/AZIMUTH: 90°/--

BORE No: BH223
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
60.9	0.2	FILL/SAND SP: coarse, dark brown, trace feathers, bone, manure and rootlets, dry		E	0.1 0.2		PID < 1 ppm		
60.3	0.6	CLAY CL-CI: low to medium plasticity, dark brown, w < pl, firm, residual		E	0.4 0.5		PID < 1 ppm		
		Bore discontinued at 0.6m; Target depth reached							

RIG: Hand Tools **DRILLER:** JS **LOGGED:** JS **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 61.0 AHD
EASTING: 301254.5
NORTHING: 6255710
DIP/AZIMUTH: 90°/--

BORE No: BH224
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
61	0.2	FILL/SAND SP: coarse, dark brown, trace feathers, manure, bones, dry		E	0.1		PID < 1 ppm		
					0.2				
	0.6	CLAY CL-CI: low to medium plasticity, light brown, w < pl, firm, residual		E	0.3		PID < 1 ppm		
		Bore discontinued at 0.6m; Target depth reached			0.4				
60	1								1
59	2								2
58	3								3
57	4								4
56	5								5
55	6								6
54	7								7
53	8								8
52	9								9

RIG: Hand Tools **DRILLER:** JS **LOGGED:** JS **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: Cleanaway Operations Pty Ltd
PROJECT: EASTERN CREEK, 339 Wallgrove Road DD
LOCATION: Eastern Creek

SURFACE LEVEL: 61.0 AHD
EASTING: 301292.8
NORTHING: 6255712.2
DIP/AZIMUTH: 90°/--

BORE No: BH225
PROJECT No: 84822.02
DATE: 16/9/2019
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
61	0.2	FILL/SAND SP: coarse, dark brown, trace manure, bones, feathers, dry		E	0.1		PID < 1 ppm		
				E	0.2		PID < 1 ppm		
	0.5	CLAY CL-Cl: low to medium plasticity, brown, w < pl, firm, residual			0.3				
		0.40m: grading light brown mottled grey			0.4				
60	1	Bore discontinued at 0.5m; Auger refusal							
59	2								
58	3								
57	4								
56	5								
55	6								
54	7								
53	8								
52	9								

RIG: Hand Tools **DRILLER:** JS **LOGGED:** JS **CASING:** -

TYPE OF BORING: Auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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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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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: $\pi = 3.14$
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_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
$= \pi h_1 d_1^2/4 + n(\pi h_2 d_2^2/4 - \pi h_2 d_1^2/4)$

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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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

Number	Name	Location
1586045		Unit 2, 1A Raffles Glade, EASTERN CREEK, NSW 2766
12454	ALUMINIUM SPECIALTIES GROUP PTY. LTD.	3 ALSPEC PLACE, EASTERN CREEK, NSW 2766
1093363	ALUMINIUM SPECIALTIES GROUP PTY. LTD.	3 ALSPEC PLACE, EASTERN CREEK, NSW 2766
1526973	ALUMINIUM SPECIALTIES GROUP PTY. LTD.	3 ALSPEC PLACE, EASTERN CREEK, NSW 2766
1537603	ALUMINIUM SPECIALTIES GROUP PTY. LTD.	3 ALSPEC PLACE, EASTERN CREEK, NSW 2766
21070	CLEANAWAY PTY LTD	Unit 2, 1A Raffles Glade, EASTERN CREEK, NSW 2766
1574122	CLEANAWAY PTY LTD	Unit 2, 1A Raffles Glade, EASTERN CREEK, NSW 2766
13426	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
20121	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
1508182	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
3085765569	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
3085766146	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
1509249	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
1508582	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
1510881	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
1511947	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
1512149	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
1515838	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
1519395	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
1532263	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
1534175	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
1549945	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
3085781500	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766

1548441	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
1535829	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
1568885	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
1569556	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
1570713	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
1557001	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
1577866	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
1575668	Dial-A-Dump (EC) Pty Ltd	Honeycomb Drive, EASTERN CREEK, NSW 2766
11798	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1046507	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1062807	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1090374	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1095159	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1119497	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
3085764880	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1508285	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1509935	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1511570	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1517265	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1532261	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
3173523110	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1570762	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
10042	EDL LFG (NSW) PTY LTD	WALLGROVE ROAD , EASTERN CREEK, NSW 2766
1519416	EDL LFG (NSW) PTY LTD	WALLGROVE ROAD , EASTERN CREEK, NSW 2766

1536889	EDL LFG (NSW) PTY LTD	WALLGROVE ROAD , EASTERN CREEK, NSW 2766
1582694	EDL LFG (NSW) PTY LTD	WALLGROVE ROAD , EASTERN CREEK, NSW 2766
1035369	EDL OPERATIONS (EASTERN CREEK) PTY LTD	WALLGROVE ROAD , EASTERN CREEK, NSW 2766
1038985	EDL OPERATIONS (EASTERN CREEK) PTY LTD	WALLGROVE ROAD , EASTERN CREEK, NSW 2766
494	FULTON HOGAN INDUSTRIES PTY LTD	Honeycomb Drive, EASTERN CREEK, NSW 2766
1538323	FULTON HOGAN INDUSTRIES PTY LTD	Honeycomb Drive, EASTERN CREEK, NSW 2766
1031409	GLOBAL RENEWABLES LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
5073	HANSON CONSTRUCTION MATERIALS PTY LTD	Off Wallgrove Road, EASTERN CREEK, NSW 2766
1028278	HANSON CONSTRUCTION MATERIALS PTY LTD	Off Wallgrove Road, EASTERN CREEK, NSW 2766
1028667	HANSON CONSTRUCTION MATERIALS PTY LTD	Off Wallgrove Road, EASTERN CREEK, NSW 2766
1035853	HANSON CONSTRUCTION MATERIALS PTY LTD	Off Wallgrove Road, EASTERN CREEK, NSW 2766
1041638	HANSON CONSTRUCTION MATERIALS PTY LTD	Off Wallgrove Road, EASTERN CREEK, NSW 2766
1057995	HANSON CONSTRUCTION MATERIALS PTY LTD	Off Wallgrove Road, EASTERN CREEK, NSW 2766
1101636	HANSON CONSTRUCTION MATERIALS PTY LTD	Off Wallgrove Road, EASTERN CREEK, NSW 2766
1503085	HANSON CONSTRUCTION MATERIALS PTY LTD	Off Wallgrove Road, EASTERN CREEK, NSW 2766
1524875	HANSON CONSTRUCTION MATERIALS PTY LTD	Off Wallgrove Road, EASTERN CREEK, NSW 2766
11509	INTERNATIONAL THEME PARK PTY LTD	100 Wallgrove Road, EASTERN CREEK, NSW 2766
1039330	INTERNATIONAL THEME PARK PTY LTD	100 Wallgrove Road, EASTERN CREEK, NSW 2766
12569	LMS ENERGY PTY LTD	Ferrers Road, EASTERN CREEK, NSW 2766
1090128	LMS ENERGY PTY LTD	Ferrers Road, EASTERN CREEK, NSW 2766
1096909	LMS ENERGY PTY LTD	Ferrers Road, EASTERN CREEK, NSW 2766
1109769	LMS ENERGY PTY LTD	Ferrers Road, EASTERN CREEK, NSW 2766
7119	NSW ELECTRICITY NETWORKS OPERATIONS PTY LIMITED	200 OLD WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1536632	NSW ELECTRICITY NETWORKS OPERATIONS PTY LIMITED	200 OLD WALLGROVE ROAD, EASTERN CREEK, NSW 2766

12517	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
3085769510	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1514356	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
3085774167	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1533413	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1531277	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
3085779108	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1540816	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1546201	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1548504	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1559600	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1005521	TRANSGRID	200 OLD WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1049362	TRANSGRID	200 OLD WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1093431	TRANSGRID	200 OLD WALLGROVE ROAD, EASTERN CREEK, NSW 2766
5272	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1009091	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1035365	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1036651	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1039725	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1040691	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1042368	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1043618	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1049661	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1052652	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766

1055257	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1056309	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1063015	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1064136	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1068218	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1071951	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1073175	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1076667	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1079324	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1088949	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1092283	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1095397	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1096866	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1101389	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1108193	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1109544	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1115192	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1112667	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1504832	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
3085763634	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
3085764871	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1508290	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1511019	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1511796	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766

1537731	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1539324	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1548928	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1093108	WSN ENVIRONMENTAL SOLUTIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766
1104517	WSN ENVIRONMENTAL SOLUTIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766

Type	Status	Issued date
s.58 Licence Variation	Pending	25-Sep-19
POEO licence	Issued	24-May-06
s.58 Licence Variation	Issued	15-Jun-09
s.58 Licence Variation	Issued	28-Apr-15
s.58 Licence Variation	Issued	2-Feb-16
POEO licence	Issued	31-Aug-18
s.58 Licence Variation	Issued	31-Jan-19
POEO licence	Issued	2-Mar-12
POEO licence	Issued	8-Jun-12
s.58 Licence Variation	Issued	31-Aug-12
Penalty Notice	Issued	10-Sep-12
Penalty Notice	Issued	4-Oct-12
s.58 Licence Variation	Issued	15-Nov-12
s.58 Licence Variation	Issued	21-Dec-12
s.58 Licence Variation	Issued	24-Dec-12
Compliance Audit	Complete	11-Feb-13
s.58 Licence Variation	Issued	4-Jul-13
s.58 Licence Variation	Issued	11-Oct-13
s.58 Licence Variation	Issued	5-Jun-14
s.58 Licence Variation	Issued	24-Sep-15
s.58 Licence Variation	Issued	6-Oct-15
s.91 Clean Up Notice	Issued	21-Mar-17
Penalty Notice	Issued	19-May-17

s.58 Licence Variation	Issued	12-Apr-18
s.58 Licence Variation	Issued	22-Aug-18
s.91 Clean Up Notice	Issued	24-Aug-18
s.110 Variation of Clean Up Notice	Issued	18-Sep-18
s.110 Variation of Clean Up Notice	Issued	15-Nov-18
s.110 Variation of Clean Up Notice	Issued	21-Nov-18
Compliance Audit	Complete	29-Mar-19
s.58 Licence Variation	Issued	7-Jun-19
POEO licence	Issued	14-Feb-03
s.91 Clean Up Notice	Issued	18-Apr-05
s.96 Prevention Notice	Issued	20-Jul-06
s.58 Licence Variation	Issued	28-Oct-08
s.58 Licence Variation	Issued	26-Nov-08
s.58 Licence Variation	Issued	29-Oct-10
Penalty Notice	Issued	27-Jul-12
s.58 Licence Variation	Issued	27-Aug-12
Compliance Audit	Complete	5-Nov-12
s.58 Licence Variation	Issued	4-Feb-13
s.58 Licence Variation	Issued	23-Oct-13
s.58 Licence Variation	Issued	20-Aug-15
Penalty Notice	Issued	22-Aug-17
s.58 Licence Variation	Issued	16-Jan-19
POEO licence	Issued	8-Nov-00
s.58 Licence Variation	Issued	29-May-14

s.58 Licence Variation	Issued	30-Dec-15
s.58 Licence Variation	Issued	20-Aug-19
s.58 Licence Variation	Issued	27-May-04
s.58 Licence Variation	Issued	19-Jul-04
POEO licence	Issued	25-Feb-00
s.58 Licence Variation	Issued	4-Apr-17
s.58 Licence Variation	Issued	9-Oct-03
POEO licence	Surrendered	2-Nov-00
s.58 Licence Variation	Issued	27-Jun-03
s.58 Licence Variation	Issued	12-Nov-03
s.58 Licence Variation	Issued	18-Jun-04
s.58 Licence Variation	Issued	26-Nov-04
s.58 Licence Variation	Issued	27-Apr-06
s.58 Licence Variation	Issued	11-Sep-09
s.58 Licence Variation	Issued	18-Jan-12
s.80 Surrender of a Licence	Issued	18-Feb-15
POEO licence	Surrendered	2-Oct-01
s.80 Surrender of a Licence	Issued	13-Aug-04
POEO licence	Issued	26-Feb-07
s.58 Licence Variation	Issued	14-Jul-08
s.58 Licence Variation	Issued	2-Feb-09
s.58 Licence Variation	Issued	4-Mar-10
POEO licence	Issued	26-Jun-00
s.58 Licence Variation	Issued	16-Dec-15

POEO licence	Issued	17-Aug-06
Penalty Notice	Issued	15-Mar-13
s.58 Licence Variation	Issued	30-May-13
Penalty Notice	Issued	9-Jul-14
s.91 Clean Up Notice	Issued	10-Sep-15
s.58 Licence Variation	Issued	27-Nov-15
Penalty Notice	Issued	22-Apr-16
s.58 Licence Variation	Issued	28-Oct-16
s.58 Licence Variation	Issued	1-Nov-16
s.58 Licence Variation	Issued	8-Dec-17
s.58 Licence Variation	Issued	11-Dec-17
s.58 Licence Variation	Issued	12-Apr-01
s.58 Licence Variation	Issued	3-Jul-05
s.58 Licence Variation	Issued	9-Apr-09
POEO licence	Issued	12-Apr-01
s.58 Licence Variation	Issued	16-Aug-01
s.58 Licence Variation	Issued	31-Mar-04
s.58 Licence Variation	Issued	19-May-04
s.58 Licence Variation	Issued	13-Aug-04
s.58 Licence Variation	Issued	27-Sep-04
s.58 Licence Variation	Issued	23-Nov-04
s.58 Licence Variation	Issued	4-Mar-05
s.58 Licence Variation	Issued	11-Jul-05
s.58 Licence Variation	Issued	10-Oct-05

s.58 Licence Variation	Issued	13-Jan-06
s.58 Licence Variation	Issued	1-Mar-06
s.58 Licence Variation	Issued	17-Aug-06
s.58 Licence Variation	Issued	2-Sep-06
s.58 Licence Variation	Issued	21-Dec-06
s.58 Licence Variation	Issued	3-Apr-07
s.58 Licence Variation	Issued	15-May-07
s.58 Licence Variation	Issued	3-Aug-07
s.58 Licence Variation	Issued	17-Jan-08
s.58 Licence Variation	Issued	12-Aug-08
s.58 Licence Variation	Issued	4-Nov-08
s.58 Licence Variation	Issued	19-Dec-08
s.58 Licence Variation	Issued	16-Jan-09
s.58 Licence Variation	Issued	23-Jun-09
s.58 Licence Variation	Issued	30-Oct-09
s.58 Licence Variation	Issued	9-Dec-09
s.91 Clean Up Notice	Issued	18-Jun-10
s.58 Licence Variation	Issued	20-Jan-11
s.58 Licence Variation	Issued	4-May-12
Penalty Notice	Issued	4-May-12
Penalty Notice	Issued	27-Jul-12
s.58 Licence Variation	Issued	27-Aug-12
s.58 Licence Variation	Issued	9-Jan-13
s.58 Licence Variation	Issued	4-Mar-13

s.58 Licence Variation	Issued	17-Feb-16
s.58 Licence Variation	Issued	6-May-16
s.58 Licence Variation	Issued	1-Feb-17
s.58 Licence Variation	Issued	14-Nov-08
s.58 Licence Variation	Issued	20-Jan-11

Appendix F

Laboratory Results Tables

Laboratory Certificates and Chain of Custody

Douglas Partners
Geotechnics / Environment / Groundwater

Table 15a: Summary of Soils Results – Metals, TRH, BTEX, PAH

			Metals								TRH						BTEX				PAH			
			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
		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 [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
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 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 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 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 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 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 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 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 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 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 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 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 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 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 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 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 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 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 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 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 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 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
BH205	0.4 - 0.5m	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
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
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
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
BH205	0.9 - 1m	16/09/2019	9	<0.4	19	11	19	<0.1	9	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 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
BH205	1.4 - 1.5m	16/09/2019	8	<0.4	15	19	14	<0.1	13	40	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	480 215	NL 170	NC 2500	NC 6600	6 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
BH206	0 - 0.2m	16/09/2019	<4	<0.4	15	41	12	<0.1	11	57	<25	<50	<25	<50	900	820	<0.2	<0.5	<1	<1	<1	0.1	<0.5	1.5
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
BH206	0.4 - 0.5m	16/09/2019	6	<0.4	10	31	23	<0.1	7	51	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
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
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
BD3/20190916	0.4 - 0.5m	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
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
BH207	0.8 - 1m	16/09/2019	4	<0.4	17	17	17	<0.1	9	39	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
BH208	0 - 0.2m	24/09/2019	7	12	87	410	180	0.2	71	1600	<25	<50	<25	<50	140	<100	<0.2	<0.5	<1	<1	<1	0.06	<0.5	0.06
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
BH208	0.2 - 0.3m	24/09/2019	6	<0.4	25	25	19	<0.1	19	81	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
BH209	0.4 - 0.5m	24/09/2019	<4	<0.4	6	11	6	<0.1	3	9	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
BH210	0 - 0.2m	24/09/2019	<4	<0.4	9	7	12	<0.1	3	43	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.1	<0.5	0.4
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
BH211	0.4 - 0.5m	16/09/2019	6	<0.4	14	23	22	<0.1	10	66	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.61	0.8	5.1
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
BH211	1.6 - 1.7m	16/09/2019	9	<0.4	13	24	44	<0.1	7	79	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	480 215	NL 170	NC 2500	NC 6600	6 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
BH212	0 - 0.2m	16/09/2019	7	<0.4	13	22	27	<0.1	12	47	<25	<50	<25	<50	120	130	<0.2	<0.5	<1	<1	<1	0.4	0.5	3.6
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
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
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
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
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
BH212	0.9 - 1m	16/09/2019	5	<0.4	12	17	16	<0.1	8	35	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.09	<0.5	0.75
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
BH212	1.9 - 2m	16/09/2019	8	<0.4	17	11	18	<0.1	3	15	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	480 215	NL 170	NC 2500	NC 6600	6 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
BH213	0.4 - 0.5m	18/09/2019	7	<0.4	12	23	200	0.2	8	160	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.2	<0.5	1.7
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
BH213	0.9 - 1m	18/09/2019	6	<0.4	14	16	38	<0.1	14	48	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.2	<0.5	1.7
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
BH214	0.1 - 0.2m	16/09/2019	6	<0.4	12	29	15	<0.1	9	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 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
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
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC
BD1A/20190916	0.3 - 0.4m	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
			3000 160	900 NC	3600 670	240000 340	1500 1800	730 NC	6000 620	400000 1600	NC NC	NC NC	310 215	NL 170	NC 2500	NC 6600	4 95	NL 135	NL 185	NL 95	NL 370	NC 1.4	40 NC	4000 NC

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Table 15b: Summary of Soils Results – Phenol, OCP, OPP, PCB, 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 in soil >0.1g/kg	Trace Analysis	Asbestos (50 g)
		PQL	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
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	-	-	-
BH201	0 - 0.2m	16/09/2019	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BD1/20190916	0 - 0.2m	16/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH201	0.8 - 1m	16/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH202	0 - 0.2m	16/09/2019	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH202	0.4 - 0.45m	16/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH203	0.4 - 0.5m	16/09/2019	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH203	0.9 - 1m	16/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH204	0 - 0.2m	16/09/2019	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH204	0.4 - 0.5m	16/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH204	0.8 - 1m	16/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH205	0 - 0.2m	16/09/2019	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH205	0.4 - 0.5m	16/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BD2/20190916	0.4 - 0.5m	16/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH205	0.9 - 1m	16/09/2019	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH205	1.4 - 1.5m	16/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH206	0 - 0.2m	16/09/2019	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH206	0.4 - 0.5m	16/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH207	0.4 - 0.5m	16/09/2019	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BD3/20190916	0.4 - 0.5m	16/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH207	0.8 - 1m	16/09/2019	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH208	0 - 0.2m	24/09/2019	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH208	0.2 - 0.3m	24/09/2019	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH209	0.4 - 0.5m	24/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH210	0 - 0.2m	24/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH211	0.4 - 0.5m	16/09/2019	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH211	1.6 - 1.7m	16/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH212	0 - 0.2m	16/09/2019	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH212	0.4 - 0.5m	16/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BD4/20190916	0.4 - 0.5m	16/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH212	0.9 - 1m	16/09/2019	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH212	1.9 - 2m	16/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH213	0.4 - 0.5m	18/09/2019	NT	<0.1	<0.1	0.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH213	0.9 - 1m	18/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH214	0.1 - 0.2m	16/09/2019	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH214	0.3 - 0.4m	16/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BD1A/20190916	0.3 - 0.4m	16/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH215	0.2 - 0.3m	16/09/2019	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			
BH216	0.1 - 0.2m	16/09/2019	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	<NAD
			660 NC	3600 640	45 NC	530 NC	2000 NC	100 NC	50 NC	80 NC	2500 NC	2000 NC	7 NC			

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Table 15c: 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**																					
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
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

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Table 15c: 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**																
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
BD4-300415	-	ELS	Soil	127666	13/05/2015	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	13/05/2015	-	-	-	-	-	-	-	-	-	-	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	-	-
BD2-040515	-	ELS	Soil	127666	13/05/2015	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	13/05/2015	10	<0.4	20	19	22	-	<0.1	10	-	30	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	-	-
BD1-060515	-	ELS	Soil	127666	13/05/2015	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	13/05/2015	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	13/05/2015	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	13/05/2015	6	<0.4	14	15	17	-	<0.1	7	-	21	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	IIL (+)V
BH2	0.4-0.5	ELS	Soil	127666	12/05/2015	5	<0.4	11	17	15	-	<0.1	10	-	28	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	IIL (+)V
BH3	0-0.1	ELS	Soil	127666	13/05/2015	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	12/05/2015	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	13/05/2015	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	12/05/2015	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	13/05/2015	6	<0.4	19	19	23	-	<0.1	8	-	26	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	IIL (+)V
BH6	0-0.1	ELS	Soil	127666	13/05/2015	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	12/05/2015	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	13/05/2015	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	13/05/2015	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	13/05/2015	12	0.4	16	23	62	-	<0.1	7	-	150	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	IIL (+)V
BH8	0-0.1	ELS	Soil	127666	13/05/2015	7	<0.4	18	18	24	-	<0.1	12	-	33	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	IIL (+)V
BH9	0-0.1	ELS	Soil	127666	13/05/2015	7	<0.4	8	39	16	-	<0.1	28	-	100	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	IIL (+)V
BH9	1.5-1.6	ELS	Soil	127666	13/05/2015	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	13/05/2015	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	13/05/2015	4	<0.4	12	18	10	-	<0.1	7	-	22	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	IIL (+)V
BH10	0-0.1	ELS	Soil	127666	13/05/2015	10	<0.4	18	16	25	-	<0.1	9	-	27	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	IIL (+)V
BH11	0-0.1	ELS	Soil	127666	13/05/2015	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	13/05/2015	<4	<0.4	85	24	7	-	<0.1	77	-	54	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	IIL (+)V
BH12	0-0.1	ELS	Soil	127666	13/05/2015	<4	<0.4	72	25	8	-	<0.1	68	-	49	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	IIL (+)V
BH12	0.4-0.5	ELS	Soil	127666	13/05/2015	11	<0.4	13	34	19	-	<0.1	16	-	82	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	IIL (+)V
BH13	0-0.1	ELS	Soil	127666	13/05/2015	5	<0.4	9	16	14	-	<0.1	7	-	34	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	IIL (+)V
BH13	0.4-0.5	ELS	Soil	127666	12/05/2015	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	13/05/2015	7	<0.4	11	24	16	-	<0.1	7	-	48	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	IIL (+)V
BH14	0.7-0.8	ELS	Soil	127666	13/05/2015	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	13/05/2015	<4	<0.4	20	9	15	-	<0.1	2	-	11	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	IIL (+)V
BH15	0-0.1	ELS	Soil	127666	13/05/2015	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	13/05/2015	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	13/05/2015	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	13/05/2015	<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	13/05/2015	<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	13/05/2015	7	<0.4	15	15	26	-	<0.1	11	-	37	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	IIL (+)V
BH18	0-0.1	ELS	Soil	127666	13/05/2015	<4	<0.4	9	54	6	-	<0.1	38	-	92	<25	<50	<100	170	<0.2	<1	<0.5	<2	<1	<0.05	IIL (+)V

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Table 15c: 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																					
BH19	0-0.1	ELS	Soil	127666	13/05/2015	<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	13/05/2015	6	<0.4	18	31	15	-	<0.1	12	-	27	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	IIL (+)V
BH20	0-0.1	ELS	Soil	127666	13/05/2015	7	<0.4	18	21	21	-	<0.1	13	-	36	<25	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<0.05	IIL (+)V
B1	-	ELS	Plastic Scrap	127324-A	8/05/2015	28	1	2	8	51000	-	0.3	2	-	890	-	-	-	-	<0.2	<1	<0.5	<2	<1	-	-
B1	-	ELS	Plastic Scrap	127324-A	8/05/2015	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	6/05/2015	6	<0.4	16	16	56	-	<0.1	7	-	320	-	-	-	-	-	-	-	-	-	-	-
S1	0-0.15	ELS	Soil	127324	6/05/2015	7	<0.4	17	19	57	-	<0.1	8	-	340	-	-	-	-	-	-	-	-	-	-	-
S2	0-0.15	ELS	Soil	127324	6/05/2015	12	<0.4	15	27	13	-	<0.1	7	-	28	-	-	-	-	-	-	-	-	-	-	-
S3	0-0.15	ELS	Soil	127324	6/05/2015	4	<0.4	7	61	12	-	<0.1	19	-	360	-	-	-	-	-	-	-	-	-	-	-
S4	0-0.15	ELS	Soil	127324	6/05/2015	<4	<0.4	7	44	13	-	<0.1	16	-	140	-	-	-	-	-	-	-	-	-	-	-
S5	0-0.15	ELS	Soil	127324	6/05/2015	<4	3	38	120	200	-	0.2	24	-	6200	-	-	-	-	-	-	-	-	-	-	-
S6	0-0.15	ELS	Soil	127324	6/05/2015	<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
S6	0-0.15	ELS	Soil	127324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.7	30
S7	0-0.15	ELS	Soil	127324	6/05/2015	<4	0.5	32	60	69	-	<0.1	57	-	400	-	-	-	-	-	-	-	-	-	-	-
S8	0-0.15	ELS	Soil	127324	6/05/2015	<4	<0.4	12	34	15	-	<0.1	15	-	170	-	-	-	-	-	-	-	-	-	-	-
S9	0-0.15	ELS	Soil	127324	6/05/2015	<4	<0.4	16	61	25	-	<0.1	52	-	230	-	-	-	-	-	-	-	-	-	-	-
S10	0-0.15	ELS	Soil	127324	6/05/2015	<4	0.7	31	89	42	-	<0.1	49	-	480	-	-	-	-	-	-	-	-	-	-	-
S11	0-0.15	ELS	Soil	127324	6/05/2015	<4	0.5	26	74	200	-	<0.1	65	-	750	-	-	-	-	-	-	-	-	-	-	-
S11	0-0.15	ELS	Soil	127324	6/05/2015	<4	0.5	20	68	320	-	<0.1	63	-	720	-	-	-	-	-	-	-	-	-	-	-
S12	0-0.15	ELS	Soil	127324	6/05/2015	<4	<0.4	7	71	3700	-	<0.1	11	-	32	-	-	-	-	-	-	-	-	-	-	-
S13	0-0.15	ELS	Soil	127324	6/05/2015	7	0.5	20	12	95	-	<0.1	6	-	66	-	-	-	-	-	-	-	-	-	-	-
S14	0-0.15	ELS	Soil	127324	6/05/2015	<4	<0.4	21	58	14	-	<0.1	27	-	37	-	-	-	-	-	-	-	-	-	-	-
S15	0-0.15	ELS	Soil	127324	6/05/2015	7	0.6	23	57	110	-	<0.1	17	-	250	-	-	-	-	-	-	-	-	-	-	-
S16	0-0.15	ELS	Soil	127324	6/05/2015	<4	<0.4	<1	41	<1	-	<0.1	4	-	260	-	-	-	-	-	-	-	-	-	-	-
S17	0-0.15	ELS	Soil	127324	6/05/2015	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 15c: Preliminary Waste Classification

						Organochlorine Pesticides																		Organophosphorus Pesticides						Polychlorinated Biphenyls								
						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
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	none
NSW EPA (2014) General Solid Waste (SCC1, TCLP1)						<50**										108			<50**				-	7.5	250 *				<50 ***							518	none
NSW EPA (2014) Restricted Solid Waste (CT2)						<50**										240			<50**				-	16	1000 *				<50 ***							1152	none
NSW EPA (2014) Restricted Solid Waste (SCC2, TCLP2)						<50**										432			<50**				-	30	1000 *				<50 ***							2073	none
ANZECC (1992) - Background Ranges For Natural Material						-										-			-				-	-	-				-							-	-
Location	**Depth (m)**	**Laboratory**	**Material**	**Report**	**Date**																																	
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
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	<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	-	-
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	<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	<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	<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	<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	-	-
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	<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	<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	<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	-	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	-	-
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	<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	<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	<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	<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	-	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	<5	NAD

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Table 15c: Preliminary Waste Classification

						Organochlorine Pesticides																	Organophosphorus Pesticides						Polychlorinated Biphenyls								
						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
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	none
NSW EPA (2014) General Solid Waste (SCC1, TCLP1)						<50**										108			<50**				-	7.5	250 *				<50 ***							518	none
NSW EPA (2014) Restricted Solid Waste (CT2)						<50**										240			<50**				-	16	1000 *				<50 ***							1152	none
NSW EPA (2014) Restricted Solid Waste (SCC2, TCLP2)						<50**										432			<50**				-	30	1000 *				<50 ***							2073	none
ANZECC (1992) - Background Ranges For Natural Material						-										-			-				-	-	-				-							-	-
Location	**Depth (m)**	**Laboratory**	**Material**	**Report**	**Date**																																	
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	<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	<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	-	-
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	<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	<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
BD4-300415	-	ELS	Soil	127666	13/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD4-300415	-	ELS	Soil	127666	13/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD2-040515	-	ELS	Soil	127666	13/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD3-050515	-	ELS	Soil	127666	13/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD1-060515	-	ELS	Soil	127666	13/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH1	0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH1	0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	-
BH2	0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH2	0.4-0.5	ELS	Soil	127666	12/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH3	0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH3	0.4-0.5	ELS	Soil	127666	12/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH4	0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH4	0.9-1	ELS	Soil	127666	12/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH5	0.0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH6	0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH7	0-0.1	ELS	Soil	127666	12/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH7	0.8-1.0	ELS	Soil	127666	13/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH7	0.8-1.0	ELS	Soil	127666	13/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH7	2.4-2.5	ELS	Soil	127666	13/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH8	0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH9	0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH9	1.5-1.6	ELS	Soil	127666	13/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH9	2.4-2.5	ELS	Soil	127666	13/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH9	5.4-5.5	ELS	Soil	127666	13/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH10	0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH11	0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH11	0-0.1	ELS	Soil	127666	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	-
BH12	0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH12	0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
BH12	0.4-0.5	ELS	Soil	127666	13/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH13	0.4-0.5	ELS	Soil	127666	12/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH14	0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH14	0.7-0.8	ELS	Soil	127666	13/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH14	1.4-1.5	ELS	Soil	127666	13/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH15	0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH15	0.3-0.4	ELS	Soil	127666	13/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NAD
BH15	1.4-1.5	ELS	Soil	127666	13/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16	0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH16	0-0.1	ELS	Soil	127666	13/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17	0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH18	0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD

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Table 15c: Preliminary Waste Classification

						Organochlorine Pesticides																			Organophosphorus Pesticides							Polychlorinated Biphenyls									
						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
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	none
NSW EPA (2014) General Solid Waste (SCC1, TCLP1)						<50**										108			<50**				-	7.5	250 *					<50 ***							518	none
NSW EPA (2014) Restricted Solid Waste (CT2)						<50**										240			<50**				-	16	1000 *					<50 ***							1152	none
NSW EPA (2014) Restricted Solid Waste (SCC2, TCLP2)						<50**										432			<50**				-	30	1000 *					<50 ***							2073	none
ANZECC (1992) - Background Ranges For Natural Material						-										-			-				-	-	-					-							-	-
Location	**Depth (m)**	**Laboratory**	**Material**	**Report**	**Date**																																			
BH19	0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
BH19	0.5-0.6	ELS	Soil	127666	13/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20	0-0.1	ELS	Soil	127666	13/05/2015	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<5	NAD
B1	-	ELS	Plastic Scrap	127324-A	8/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B1	-	ELS	Plastic Scrap	127324-A	8/05/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B1 - TRIPLICATE	-	ELS	Material	127324-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S1	0-0.15	ELS	Soil	127324	6/05/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<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
S1	0-0.15	ELS	Soil	127324	6/05/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
S2	0-0.15	ELS	Soil	127324	6/05/2015	<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	<0.1	<0.1	-	NAD
S3	0-0.15	ELS	Soil	127324	6/05/2015	<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	<0.1	<0.1	-	NAD
S4	0-0.15	ELS	Soil	127324	6/05/2015	<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	<0.1	<0.1	-	NAD
S5	0-0.15	ELS	Soil	127324	6/05/2015	<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	<0.1	<0.1	-	NAD
S6	0-0.15	ELS	Soil	127324	6/05/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	NAD
S6	0-0.15	ELS	Soil	127324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S7	0-0.15	ELS	Soil	127324	6/05/2015	<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	<0.1	<0.1	-	NAD
S8	0-0.15	ELS	Soil	127324	6/05/2015	<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	<0.1	<0.1	-	NAD
S9	0-0.15	ELS	Soil	127324	6/05/2015	<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	<0.1	<0.1	-	NAD
S10	0-0.15	ELS	Soil	127324	6/05/2015	<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	<0.1	<0.1	-	-
S11	0-0.15	ELS	Soil	127324	6/05/2015	<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	<0.1	<0.1	-	-
S11	0-0.15	ELS	Soil	127324	6/05/2015	<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	<0.1	<0.1	-	-
S12	0-0.15	ELS	Soil	127324	6/05/2015	<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	<0.1	<0.1	-	-
S13	0-0.15	ELS	Soil	127324	6/05/2015	<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	<0.1	<0.1	-	-
S14	0-0.15	ELS	Soil	127324	6/05/2015	<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	<0.1	<0.1	-	-
S15	0-0.15	ELS	Soil	127324	6/05/2015	<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	<0.1	<0.1	-	NAD
S16	0-0.15	ELS	Soil	127324	6/05/2015	<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	<0.1	<0.1	-	NAD
S17	0-0.15	ELS	Soil	127324	6/05/2015	<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	<0.1	<0.1	-	NAD
BD1/300415	-	ELS	Soil	127324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD2/300415	-	ELS	Soil	127324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Field_ID	LocCode	Sampled_Date-Time	PAHs in Water - Low Level			Inorganics						Cyanides
			Benzo(a)pyrene TEQ	Benzo(b,j+k)fluoranthene	Total +ve PAHs	Ammonia	Chloride	Nitrate (as N)	Nitrite (as N)	Phosphate (as P)	Sulphate	Cyanide Total
			µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.5	0.2		0.005	1	0.005	0.005	0.005	1	0.004
ANZECC 2000 LOW RELIABILITY FW												
ANZECC 2000 Fresh Water						0.9						0.007
ANZG (2018) Freshwater (unknown reliability) toxicant DGVs												
ANZG (2018) Freshwater 95% toxicant DGVs												
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Clay												
2-4m												
4-8m												
>8m												
Drinking Water											500	0.08
Groundwater Samples												
BD1/20190917	SW01	17/09/2019	-	-	-	-	-	-	-	-	-	-
BD1/20190924	BH208	24/09/2019	-	-	-	-	-	-	-	-	-	-
BH2	BH2	20/09/2019	<0.5	<0.2	0	0.25	4700	0.19	0.008	0.082	510	<0.004
BH201	BH201	24/09/2019	<0.5	<0.2	0	1.7	25,000	0.4	0.051	<0.005	11,000	<0.004
BH204	BH204	20/09/2019	<0.5	<0.2	0	1.3	5200	<0.005	<0.005	<0.005	2400	<0.004
BH208	BH208	24/09/2019	<0.5	<0.2	0	0.47	7200	370	0.097	<0.005	530	<0.004
BH213	BH213	20/09/2019	<0.5	<0.2	0	0.75	4600	1.2	0.038	0.016	660	<0.004
BH4	BH4	20/09/2019	<0.5	<0.2	0	0.033	2000	0.02	<0.005	0.007	780	<0.004
Rinsate	Rinsate	17/09/2019	-	-	-	-	-	-	-	-	-	-
Surface Water Samples												
SW01	SW01	17/09/2019	<0.5	<0.2	0	1.1	23	6.4	0.054	0.17	9	<0.004
SW02	SW02	17/09/2019	<0.5	<0.2	0	0.12	69	4.7	0.042	0.41	38	<0.004
SW03	SW03	17/09/2019	<0.5	<0.2	0	0.6	230	0.11	0.029	0.087	44	<0.004
SW04	SW04	17/09/2019	<0.5	<0.2	0	0.05	110	0.09	<0.005	0.019	55	<0.004
SW05	SW05	17/09/2019	<0.5	<0.2	0	0.39	230	0.93	0.052	0.035	41	<0.004
SW06	SW06	17/09/2019	<0.5	<0.2	0	0.17	15	10	0.049	0.33	11	<0.004
TB		17/09/2019	-	-	-	-	-	-	-	-	-	-
Trip Blank		24/09/2019	-	-	-	-	-	-	-	-	-	-
Statistical Summary												
Number of Results			12	12	12	12	12	12	12	12	12	12
Number of Detects			0	0	12	12	12	11	9	9	12	0
Minimum Concentration			<0.5	<0.2	0	0.033	15	<0.005	<0.005	<0.005	9	<0.004
Minimum Detect			ND	ND	ND	0.033	15	0.02	0.008	0.007	9	ND
Maximum Concentration			<0.5	<0.2	0	1.7	25000	370	0.097	0.41	11000	<0.004
Maximum Detect			ND	ND	ND	1.7	25000	370	0.097	0.41	11000	ND
Average Concentration			0.25	0.1	0	0.58	4115	33	0.036	0.097	1340	0.002
Median Concentration			0.25	0.1	0	0.43	1115	0.665	0.04	0.027	282.5	0.002
Standard Deviation			0	0	0	0.54	7059	106	0.028	0.14	3116	0
Number of Guideline Exceedances			0	0	0	3	0	0	0	0	6	0
Number of Guideline Exceedances(Detects Only)			0	0	0	3	0	0	0	0	6	0

Field_ID	LocCode	Sampled_Date-Time	Metals																	
			Arsenic	Arsenic (Filtered)	Cadmium	Cadmium (Filtered)	Calcium (Filtered)	Chromium (III+VI)	Chromium (III+VI) (Filtered)	Copper	Copper (Filtered)	Lead	Lead (Filtered)	Magnesium (Filtered)	Mercury	Mercury (Filtered)	Nickel	Nickel (Filtered)	Zinc	Zinc (Filtered)
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.001	0.001	0.0001	0.0001	0.5	0.001	0.001	0.001	0.001	0.001	0.001	0.5	0.00005	0.00005	0.001	0.001	0.001	0.001
ANZECC 2000 LOW RELIABILITY FW																				
ANZECC 2000 Fresh Water					0.0002	0.0002				0.0014	0.0014	0.0034	0.0034		0.00006	0.00006	0.011	0.011	0.008	0.008
ANZG (2018) Freshwater (unknown reliability) toxicant DGVs																				
ANZG (2018) Freshwater 95% toxicant DGVs					0.0002	0.0002				0.0014	0.0014	0.0034	0.0034		0.0006	0.0006	0.011	0.011	0.008	0.008
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Clay																				
2-4m																				
4-8m																				
>8m																				
Drinking Water			0.01	0.01	0.002	0.002				2	2	0.01	0.01		0.001	0.001	0.02	0.02		
Groundwater Samples																				
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	-	<0.001	-	0.0001	61	-	<0.001	-	0.002	-	<0.001	290	-	<0.00005	-	0.006	-	0.006
BH201	BH201	24/09/2019	-	0.003	-	0.0004	320	-	0.001	-	0.007	-	<0.001	290	-	<0.00005	-	0.011	-	0.059
BH204	BH204	20/09/2019	-	<0.001	-	<0.0001	150	-	0.002	-	<0.001	-	<0.001	650	-	<0.00005	-	0.027	-	0.003
BH208	BH208	24/09/2019	-	0.003	-	0.0002	190	-	<0.001	-	0.009	-	<0.001	690	-	<0.00005	-	0.006	-	0.023
BH213	BH213	20/09/2019	-	<0.001	-	0.0002	51	-	<0.001	-	0.003	-	<0.001	490	-	<0.00005	-	0.01	-	0.022
BH4	BH4	20/09/2019	-	0.001	-	0.0002	200	-	<0.001	-	0.007	-	<0.001	200	-	<0.00005	-	0.002	-	0.012
Rinsate	Rinsate	17/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Surface Water Samples																				
SW01	SW01	17/09/2019	0.001	-	0.0002	-	12	<0.001	-	0.011	-	0.002	-	3.5	<0.00005	-	0.002	-	0.24	-
SW02	SW02	17/09/2019	0.001	-	<0.0001	-	19	0.003	-	0.008	-	0.004	-	13	<0.00005	-	0.003	-	0.45	-
SW03	SW03	17/09/2019	0.001	-	<0.0001	-	57	0.002	-	0.007	-	0.004	-	34	<0.00005	-	0.002	-	0.035	-
SW04	SW04	17/09/2019	<0.001	-	<0.0001	-	26	<0.001	-	0.002	-	<0.001	-	17	<0.00005	-	0.001	-	0.012	-
SW05	SW05	17/09/2019	0.002	-	<0.0001	-	38	0.003	-	0.008	-	0.006	-	26	<0.00005	-	0.004	-	0.034	-
SW06	SW06	17/09/2019	<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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																				
Number of Results			7	7	7	7	12	7	7	7	7	7	7	12	7	7	7	7	7	7
Number of Detects			5	4	2	6	12	3	2	7	6	6	0	12	0	0	7	7	7	7
Minimum Concentration			<0.001	<0.001	<0.0001	<0.0001	12	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	3.5	<0.00005	<0.00005	0.001	0.002	0.012	0.003
Minimum Detect			0.001	0.001	0.0002	0.0001	12	0.002	0.001	0.002	0.002	0.001	ND	3.5	ND	ND	0.001	0.002	0.012	0.003
Maximum Concentration			0.002	0.003	0.0002	0.0004	320	0.003	0.002	0.011	0.009	0.006	<0.001	690	<0.00005	<0.00005	0.004	0.027	1.5	0.059
Maximum Detect			0.002	0.003	0.0002	0.0004	320	0.003	0.002	0.011	0.009	0.006	ND	690	ND	ND	0.004	0.027	1.5	0.059
Average Concentration			0.001	0.0015	0.000093	0.00019	95	0.0014	0.00079	0.0076	0.0054	0.0026	0.0005	226	0.000025	0.000025	0.0021	0.0096	0.36	0.021
Median Concentration			0.001	0.001	0.00005	0.0002	54	0.0005	0.0005	0.008	0.007	0.002	0.0005	117	0.000025	0.000025	0.002	0.006	0.23	0.021
Standard Deviation			0.0005	0.0012	0.000073	0.00011	98	0.0012	0.00057	0.0028	0.0035	0.0021	0	259	0	0	0.0011	0.0083	0.53	0.019
Number of Guideline Exceedances			0	0	0	1	0	0	0	7	6	3	0	0	0	0	0	1	7	5
Number of Guideline Exceedances(Detects Only)			0	0	0	1	0	0	0	7	6	3	0	0	0	0	0	1	7	5

Field_ID	LocCode	Sampled_Date-Time	TPH										BTEX						
			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)	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene
			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
EQL			0.05	0.1	0.1	0.05	0.01	0.05	0.1	0.1	0.01	0.01	0.001	0.001	0.001	0.002	0.001	0.001	0.001
ANZECC 2000 LOW RELIABILITY FW																			
ANZECC 2000 Fresh Water													0.95				0.35		
ANZG (2018) Freshwater (unknown reliability) toxicant DGVs														0.08	0.18				
ANZG (2018) Freshwater 95% toxicant DGVs													0.95				0.35		
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Clay																			
2-4m						NL					NL		30	NL	NL				
4-8m						NL					NL		30	NL	NL				
>8m						NL					NL		35	NL	NL				
Drinking Water													0.001	0.3	0.8				
Groundwater Samples																			
BD1/20190917	SW01	17/09/2019	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	0.001	<0.002	<0.001	<0.001	<0.001
BD1/20190924	BH208	24/09/2019	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001
BH2	BH2	20/09/2019	<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.1	<0.1	<0.01	<0.01	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001
BH201	BH201	24/09/2019	<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.1	<0.1	<0.01	<0.01	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001
BH204	BH204	20/09/2019	<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.1	<0.1	<0.01	<0.01	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001
BH208	BH208	24/09/2019	<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.1	<0.1	<0.01	<0.01	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001
BH213	BH213	20/09/2019	<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.1	<0.1	<0.01	<0.01	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001
BH4	BH4	20/09/2019	<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.1	<0.1	<0.01	<0.01	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001
Rinsate	Rinsate	17/09/2019	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001
Surface Water Samples																			
SW01	SW01	17/09/2019	<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.1	<0.1	<0.01	<0.01	<0.001	<0.001	0.001	<0.002	<0.001	<0.001	<0.001
SW02	SW02	17/09/2019	<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.1	<0.1	<0.01	<0.01	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001
SW03	SW03	17/09/2019	0.056	0.24	<0.1	0.056	<0.01	0.051	0.17	0.11	<0.01	<0.01	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001
SW04	SW04	17/09/2019	<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.1	<0.1	<0.01	<0.01	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001
SW05	SW05	17/09/2019	<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.1	<0.1	<0.01	<0.01	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001
SW06	SW06	17/09/2019	<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.1	<0.1	<0.01	<0.01	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001
TB		17/09/2019	-	-	-	-	<0.01	-	-	-	<0.01	<0.01	<0.001	<0.001	<0.001	<0.002	<0.001	-	-
Trip Blank		24/09/2019	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.002	<0.001	-	-
Statistical Summary																			
Number of Results			12	12	12	12	13	12	12	12	13	13	17	17	17	17	17	15	15
Number of Detects			1	1	0	1	0	1	1	1	0	0	0	0	2	0	0	0	0
Minimum Concentration			<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.1	<0.1	<0.01	<0.01	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001
Minimum Detect			0.056	0.24	ND	0.056	ND	0.051	0.17	0.11	ND	ND	ND	ND	0.001	ND	ND	ND	ND
Maximum Concentration			0.056	0.24	<0.1	0.056	<0.01	0.051	0.17	0.11	<0.01	<0.01	<0.001	<0.001	0.001	<0.002	<0.001	<0.001	<0.001
Maximum Detect			0.056	0.24	ND	0.056	ND	0.051	0.17	0.11	ND	ND	ND	ND	0.001	ND	ND	ND	ND
Average Concentration			0.028	0.066	0.05	0.028	0.005	0.027	0.06	0.055	0.005	0.005	0.0005	0.0005	0.00056	0.001	0.0005	0.0005	0.0005
Median Concentration			0.025	0.05	0.05	0.025	0.005	0.025	0.05	0.05	0.005	0.005	0.0005	0.0005	0.0005	0.001	0.0005	0.0005	0.0005
Standard Deviation			0.0089	0.055	0	0.0089	0	0.0075	0.035	0.017	0	0	0	0	0.00017	0	0	0	0
Number of Guideline Exceedances			0	0	0	12	0	0	0	0	13	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	12	0	0	0	0	13	0	0	0	0	0	0	0	0

Table 16: Groundwater and Surface Water Results

			MAH						Chlorinated Hydrocarbons																										Halogenated Hydrocarbons							
			Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	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	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Trichlorofluoromethane
			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
EQL			**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**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**
ANZECC 2000 LOW RELIABILITY FW											0.27	0.4	1.9						1.9	0.9	1.1					0.24			0.37			0.0008			0.33	0.07		0.0008					
ANZECC 2000 Fresh Water													6.5																													
ANZG (2018) Freshwater (unknown reliability) toxicar			0.03								0.27	0.4	0.33		0.7				1.9	0.9	1.1					0.24			0.37							0.07			0.1				
ANZG (2018) Freshwater 95% toxicant DGVs													6.5																													
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vap																																										
2-4m																																										
4-8m																																										
>8m																																										
Drinking Water								0.03							0.03				0.003							0.003								0.0007		0.05			0.0003		0.001			
Field_ID	**LocCode**	**Sampled_Date-Time**																																									
Groundwater Samples																																										
BD1/20190917	SW01	17/09/2019	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01
BD1/20190924	BH208	24/09/2019	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01
BH2	BH2	20/09/2019	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01
BH201	BH201	24/09/2019	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01
BH204	BH204	20/09/2019	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01
BH208	BH208	24/09/2019	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01
BH213	BH213	20/09/2019	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01
BH4	BH4	20/09/2019	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01
Rinsate	Rinsate	17/09/2019	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.002**	<0.001	<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	<0.01	<0.01
Surface Water Samples																																										
SW01	SW01	17/09/2019	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01
SW02	SW02	17/09/2019	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01
SW03	SW03	17/09/2019	<0.001	<0.001	<0.001	**0.004**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01
SW04	SW04	17/09/2019	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01
SW05	SW05	17/09/2019	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01
SW06	SW06	17/09/2019	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.01	<0.01	<0.01
TB		17/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trip Blank		24/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																																										
Number of Results			15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Number of Detects			0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<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	<0.01	<0.01	<0.01
Minimum Detect			ND	ND	ND	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.002	ND	ND	ND	ND	0.008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration			<0.001	<0.001	<0.001	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<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	<0.01	<0.01	<0.01
Maximum Detect			ND	ND	ND	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.002	ND	ND	ND	ND	0.008	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration			0.0005	0.0005	0.0005	0.00073	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0006	0.0005	0.0005	0.005	0.001	0.005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.005	0.0005	0.0005	0.0005	0.0005
Median Concentration			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.005	0.0005	0.005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.005	0.0005	0.0005	0.0005	0.0005
Standard Deviation			0	0	0	0.0009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00039	0	0	0	0.0019	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	15	0	0	0	15	15	0	15	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 16: Groundwater and Surface Water Results

			Halogenated Benzenes						Solvents	PAH/Phenols																Polychlorinated Biphenyls							Organ									
			1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Hexachlorobenzene	Cyclohexane	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Phenolics Total	Pyrene	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	
			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	
EQL			**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**	**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**	
ANZECC 2000 LOW RELIABILITY FW			0.06																						0.000009	0.001	0.0003	0.0006	0.00003	0.00003	0.025									
ANZECC 2000 Fresh Water			0.06																		0.016							0.0003		0.00001								0.000006	
ANZG (2018) Freshwater (unknown reliability) toxicar							0.055	0.00005				0.0001		0.0001					0.001			0.0006									0.00003		0.000001							
ANZG (2018) Freshwater 95% toxicant DGVs			0.06																		0.016							0.0006		0.00003								0.00001	
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vap																																								
2-4m																					NL																			
4-8m																					NL																			
>8m																					NL																			
Drinking Water			0.04				0.3							0.00001																									0.009	
Field_ID	**LocCode**	**Sampled_Date-Time**																																							
Groundwater Samples																																								
BD1/20190917	SW01	17/09/2019	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BD1/20190924	BH208	24/09/2019	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH2	BH2	20/09/2019	<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	<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	
BH201	BH201	24/09/2019	<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	<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	
BH204	BH204	20/09/2019	<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	<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	
BH208	BH208	24/09/2019	<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	<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	
BH213	BH213	20/09/2019	<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	<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	
BH4	BH4	20/09/2019	<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	<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	
Rinsate	Rinsate	17/09/2019	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Surface Water Samples																																								
SW01	SW01	17/09/2019	<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	<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	
SW02	SW02	17/09/2019	<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	<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	
SW03	SW03	17/09/2019	<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	<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	
SW04	SW04	17/09/2019	<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	<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	
SW05	SW05	17/09/2019	<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	<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	
SW06	SW06	17/09/2019	<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	<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	
TB		17/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Trip Blank		24/09/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Statistical Summary																																								
Number of Results			15	15	15	15	15	12	15	12	12	12	12	12	12	12	12	12	12	12	13	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
Number of Detects			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Minimum Concentration			<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	<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	
Minimum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Maximum Concentration			<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	<0.001	<0.0001	<0.05	<0.0001	<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	
Maximum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Average Concentration			0.0005	0.0005	0.0005	0.0005	0.0005	0.000005	0.0005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00013	0.00005	0.025	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000003	
Median Concentration			0.0005	0.0005	0.0005	0.0005	0.0005	0.000005	0.0005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.0001	0.00005	0.025	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000003	
Standard Deviation			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Number of Guideline Exceedances			0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	12	0	0	0	12	12	0	0	0	12	0	0	0	0	0	0	
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**	**0.00001**
ANZECC 2000 LOW RELIABILITY FW										
ANZECC 2000 Fresh Water					0.00001		0.0002	0.00001		
ANZG (2018) Freshwater (unknown reliability) toxicar	0.00001									0.000005
ANZG (2018) Freshwater 95% toxicant DGVs					0.00002		0.0002	0.00009		
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vap										
2-4m										
4-8m										
>8m										
Drinking Water							0.01		0.0003	

Field_ID	LocCode	Sampled_Date-Time										
Groundwater Samples												
BD1/20190917	SW01	17/09/2019	-	-	-	-	-	-	-	-	-	-
BD1/20190924	BH208	24/09/2019	-	-	-	-	-	-	-	-	-	-
BH2	BH2	20/09/2019	<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	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
BH204	BH204	20/09/2019	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
BH208	BH208	24/09/2019	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
BH213	BH213	20/09/2019	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
BH4	BH4	20/09/2019	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Rinsate	Rinsate	17/09/2019	-	-	-	-	-	-	-	-	-	-
Surface Water Samples												
SW01	SW01	17/09/2019	<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	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
SW03	SW03	17/09/2019	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
SW04	SW04	17/09/2019	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
SW05	SW05	17/09/2019	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
SW06	SW06	17/09/2019	<0.00001	<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	-	-	-	-	-	-	-	-	-	-

Statistical Summary

Number of Results	12	12	12	12	12	12	12	12	12	12
Number of Detects	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005
Median Concentration	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005	0.000005
Standard Deviation	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	12
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0

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Table 17: Soil Vapour Results

									Location	BH201	BH204	BH208	BH213
									Sample Date	20/09/2019	20/09/2019	20/09/2019	20/09/2019
				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
	2-Propanol	µg/m3	**12**							**70**	**150**	**80**	**100**
	Propene	µg/m3	**0.9**							**96**	**120**	**14**	**16**
TO15 in Canisters ug/m3	1,2-Dichlorotetrafluoroethane	µg/m3	**2.5**							<2.5	<2.5	<2.5	<4.9
TPH Air/ Air Phase Hydrocarbon	TPH C5 - C8 Aliphatic	µg/m3	**200**							**20,000**	**25,000**	**17,000**	**34,000**
	TPH C9 - C10 Aromatic	µg/m3	**100**							**120**	**280**	**320**	<200
	TPH C9 - C12 Aliphatic	µg/m3	**50**							**450**	**430**	**1100**	**870**
Organic	Methane	%	**0.01**							<0.01	**0.03**	<0.01	<0.01
TPH	F2-NAPHTHALENE	ug/m3	**40**	800000	NL	NL	NL	NL		**250**	**320**	**860**	**600**
	C6-C10 less BTEX (F1)	ug/m3	**200**	1000000	19000000	55000000	130000000	270000000		**19,000**	**27,000**	**20,000**	**37,000**
BTEX	Benzene	µg/m3	**1.6**	5000	80000	230000	530000	1100000		**170**	**280**	**170**	**400**
	Ethylbenzene	µg/m3	**2.2**	1800000	31000000	NL	NL	NL		**290**	**260**	**300**	**550**
	Toluene	µg/m3	**1.9**	6500000	100000000	NL	NL	NL		**2200**	**2200**	**2100**	**4400**
	Xylene (m & p)	µg/m3	**4.3**							**680**	**670**	**750**	**1300**
	Xylene (o)	µg/m3	**2.2**							**220**	**270**	**320**	**380**
MAH	1,2,4-trimethylbenzene	µg/m3	**2.5**							**42**	**110**	**130**	**65**
	1,3,5-trimethylbenzene	µg/m3	**2.5**							**26**	**66**	**78**	**40**
	1-methyl-4 ethyl benzene	µg/m3	**2.5**							**20**	**32**	**35**	**42**
	Styrene	µg/m3	**2.1**							<2.1	<2.1	<2.1	<4.3
Chlorinated Hydrocarbons	1,1,1-trichloroethane	µg/m3	**2.7**						230000	**8**	**70**	<2.7	<5.5
	1,1,2,2-tetrachloroethane	µg/m3	**3.4**							<3.4	<3.4	<3.4	<6.9
	1,1,2-trichloroethane	µg/m3	**2.7**							<2.7	<2.7	<2.7	<5.5
	1,1-dichloroethane	µg/m3	**2**							**10**	**59**	<2	<4
	1,1-dichloroethene	µg/m3	**2**							<2	**3**	<2	<4
	1,2-dichloroethane	µg/m3	**2**							<2	<2	<2	<4
	1,2-dichloropropane	µg/m3	**2.3**							<2.3	<2.3	<2.3	<4.6
	Benzyl chloride	ug/m3	**2.6**							<2.6	<2.6	<2.6	<5.2
	Bromodichloromethane	µg/m3	**3.4**							<3.4	<3.4	<3.4	<6.7
	Bromoform	µg/m3	**5.2**							<5.2	<5.2	<5.2	<10
	Carbon tetrachloride	µg/m3	**3.1**							<3.1	<3.1	<3.1	<6.3
	Chlorodibromomethane	µg/m3	**1.6**							<1.6	<1.6	<1.6	<3.3
	Chloroethane	µg/m3	**1.3**							**52**	**230**	<1.3	<2.6
	Chloroform	µg/m3	**2.4**							<2.4	<2.4	<2.4	<4.9
	Chloromethane	µg/m3	**1**							<2.1	<2.1	<2.1	<2.1
	cis-1,2-dichloroethene	µg/m3	**2**						300	<2	<2	<2	<4
	cis-1,3-dichloropropene	µg/m3	**2.3**							<2.3	<2.3	<2.3	<4.5
	Dichloromethane	µg/m3	**17**							**200**	**200**	**230**	**200**
	Hexachlorobutadiene	µg/m3	**5.3**							<5.3	<5.3	<5.3	<11
	Trichloroethene	µg/m3	**2.7**						80	<2.7	<2.7	<2.7	<5.4
	Tetrachloroethene	µg/m3	**3.4**						8000	<3.4	<3.4	<3.4	<6.8

Table 17: Soil Vapour Results

									Location	BH201	BH204	BH208	BH213
									Sample Date	20/09/2019	20/09/2019	20/09/2019	20/09/2019
				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**					
	trans-1,2-dichloroethene	µg/m3	**2**							<2	<2	<2	<4
	trans-1,3-dichloropropene	µg/m3	**2.3**							<2.3	<2.3	<2.3	<4.5
	Vinyl chloride	µg/m3	**1.3**						100	<1.3	<2.6	<1.3	<2.6
Halogenated Hydrocarbons	1,2-dibromoethane	µg/m3	**3.8**							<3.8	<3.8	<3.8	<7.7
	Bromomethane	µg/m3	**1.9**							<1.9	<1.9	<1.9	<3.8
	Dichlorodifluoromethane	µg/m3	**2.5**							<2.5	<2.5	<2.5	<4.9
	Trichlorofluoromethane	µg/m3	**2.8**							<2.8	<2.8	<2.8	<5.6
Halogenated Benzenes	1,2,4-trichlorobenzene	µg/m3	**3.7**							<3.7	<3.7	<3.7	<7.4
	1,2-dichlorobenzene	µg/m3	**3**							<3	<3	<3	<6
	1,3-dichlorobenzene	µg/m3	**3**							<3	<3	<3	<6
	1,4-dichlorobenzene	µg/m3	**3**							<3	<3	<3	<6
	Chlorobenzene	µg/m3	**2.3**							<2.3	<2.3	<2.3	<4.6
VOCs	1,3-Butadiene	µg/m3	**1.1**							<1.1	<1.1	<1.1	<2.2
	Acrolein	µg/m3	**11**							<11	<11	<11	<23
	Methyl Methacrylate	µg/m3	**2**							<2	<2	<2	<4.1
Solvents	1,4-Dioxane	µg/m3	**1.8**							<1.8	<1.8	<1.8	<3.6
	Methyl Ethyl Ketone	µg/m3	**15**							<15	<15	<15	<29
	2-hexanone (MBK)	µg/m3	**2**							<2	<2	<2	<4.1
	4-Methyl-2-pentanone	µg/m3	**20**							<20	<20	<20	<41
	Acetone	ug/m3	**11.9**							**120**	**100**	**100**	**100**
	Carbon disulfide	µg/m3	**16**							<16	<16	<16	<31
	Cyclohexane	ug/m3	**1.7**							**190**	**410**	**200**	**430**
	Ethanol	µg/m3	**9**							**40**	**50**	**40**	**40**
	Ethyl acetate	µg/m3	**1.8**							**10**	**10**	**10**	**10**
	Heptane	µg/m3	**2**							**270**	**620**	**270**	**660**
	Hexane	µg/m3	**1.8**							**32**	**140**	**41**	**83**
	MTBE	ug/m3	**1.8**							<1.8	<1.8	<1.8	<3.6
	Tetrahydrofuran	µg/m3	**1.5**							**32**	**59**	**16**	**22**
	Vinyl acetate	µg/m3	**1.8**							<1.8	<1.8	<1.8	<3.5
PAH/Phenols	Naphthalene	µg/m3	**2.6**	4000	85000	240000	560000	1200000		<2.6	<2.6	<2.6	<5.2

Table 17: Soil Vapour Results

									Location	BH2	BH4
									Sample Date	20/09/2019	20/09/2019
				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**							<7.7	<7.7
	2-Propanol	µg/m3	**12**							**100**	**130**
	Propene	µg/m3	**0.9**							**12**	**10**
TO15 in Canisters ug/m3	1,2-Dichlorotetrafluoroethane	µg/m3	**2.5**							<4.9	<4.9
TPH Air/ Air Phase Hydrocarbon	TPH C5 - C8 Aliphatic	µg/m3	**200**							**40,000**	**39,000**
	TPH C9 - C10 Aromatic	µg/m3	**100**							**240**	<200
	TPH C9 - C12 Aliphatic	µg/m3	**50**							**890**	**880**
Organic	Methane	%	**0.01**							<0.01	<0.01
TPH	F2-NAPHTHALENE	ug/m3	**40**	800000	NL	NL	NL	NL		**570**	**620**
	C6-C10 less BTEX (F1)	ug/m3	**200**	1000000	19000000	55000000	130000000	270000000		**40,000**	**43,000**
BTEX	Benzene	µg/m3	**1.6**	5000	80000	230000	530000	1100000		**420**	**470**
	Ethylbenzene	µg/m3	**2.2**	1800000	31000000	NL	NL	NL		**630**	**530**
	Toluene	µg/m3	**1.9**	6500000	100000000	NL	NL	NL		**4800**	**4700**
	Xylene (m & p)	µg/m3	**4.3**							**1500**	**1200**
	Xylene (o)	µg/m3	**2.2**							**460**	**350**
MAH	1,2,4-trimethylbenzene	µg/m3	**2.5**							**77**	**58**
	1,3,5-trimethylbenzene	µg/m3	**2.5**							**49**	**37**
	1-methyl-4 ethyl benzene	µg/m3	**2.5**							**51**	**39**
	Styrene	µg/m3	**2.1**							**5**	<4.3
Chlorinated Hydrocarbons	1,1,1-trichloroethane	µg/m3	**2.7**						230000	<5.5	<5.5
	1,1,2,2-tetrachloroethane	µg/m3	**3.4**							<6.9	<6.9
	1,1,2-trichloroethane	µg/m3	**2.7**							<5.5	<5.5
	1,1-dichloroethane	µg/m3	**2**							<4	<4
	1,1-dichloroethene	µg/m3	**2**							<4	<4
	1,2-dichloroethane	µg/m3	**2**							<4	<4
	1,2-dichloropropane	µg/m3	**2.3**							<4.6	<4.6
	Benzyl chloride	ug/m3	**2.6**							<5.2	<5.2
	Bromodichloromethane	µg/m3	**3.4**							<6.7	<6.7
	Bromoform	µg/m3	**5.2**							<10	<10
	Carbon tetrachloride	µg/m3	**3.1**							<6.3	<6.3
	Chlorodibromomethane	µg/m3	**1.6**							<3.3	<3.3
	Chloroethane	µg/m3	**1.3**							<2.6	<2.6
	Chloroform	µg/m3	**2.4**							<4.9	<4.9
	Chloromethane	µg/m3	**1**							<2.1	<2.1
	cis-1,2-dichloroethene	µg/m3	**2**						300	<4	<4
	cis-1,3-dichloropropene	µg/m3	**2.3**							<4.5	<4.5
	Dichloromethane	µg/m3	**17**							**200**	**210**
	Hexachlorobutadiene	µg/m3	**5.3**							<11	<11
	Trichloroethene	µg/m3	**2.7**						80	<5.4	<5.4
	Tetrachloroethene	µg/m3	**3.4**						8000	<6.8	<6.8

Table 17: Soil Vapour Results

									Location	BH2	BH4
									Sample Date	20/09/2019	20/09/2019
				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**			
	trans-1,2-dichloroethene	µg/m3	**2**							<4	<4
	trans-1,3-dichloropropene	µg/m3	**2.3**							<4.5	<4.5
	Vinyl chloride	µg/m3	**1.3**						100	<2.6	<2.6
Halogenated Hydrocarbons	1,2-dibromoethane	µg/m3	**3.8**							<7.7	<7.7
	Bromomethane	µg/m3	**1.9**							<3.8	<3.8
	Dichlorodifluoromethane	µg/m3	**2.5**							<4.9	<4.9
	Trichlorofluoromethane	µg/m3	**2.8**							<5.6	<5.6
Halogenated Benzenes	1,2,4-trichlorobenzene	µg/m3	**3.7**							<7.4	<7.4
	1,2-dichlorobenzene	µg/m3	**3**							<6	<6
	1,3-dichlorobenzene	µg/m3	**3**							<6	<6
	1,4-dichlorobenzene	µg/m3	**3**							<6	<6
	Chlorobenzene	µg/m3	**2.3**							<4.6	<4.6
VOCs	1,3-Butadiene	µg/m3	**1.1**							<2.2	<2.2
	Acrolein	µg/m3	**11**							<23	<23
	Methyl Methacrylate	µg/m3	**2**							<4.1	<4.1
Solvents	1,4-Dioxane	µg/m3	**1.8**							<3.6	<3.6
	Methyl Ethyl Ketone	µg/m3	**15**							<29	<29
	2-hexanone (MBK)	µg/m3	**2**							<4.1	<4.1
	4-Methyl-2-pentanone	µg/m3	**20**							<41	<41
	Acetone	ug/m3	**11.9**							**100**	**90**
	Carbon disulfide	µg/m3	**16**							<31	<31
	Cyclohexane	ug/m3	**1.7**							**530**	**540**
	Ethanol	µg/m3	**9**							**40**	**40**
	Ethyl acetate	µg/m3	**1.8**							**10**	**18**
	Heptane	µg/m3	**2**							**750**	**820**
	Hexane	µg/m3	**1.8**							**100**	**110**
	MTBE	ug/m3	**1.8**							<3.6	<3.6
	Tetrahydrofuran	µg/m3	**1.5**							**31**	**51**
	Vinyl acetate	µg/m3	**1.8**							<3.5	<3.5
PAH/Phenols	Naphthalene	µg/m3	**2.6**	4000	85000	240000	560000	1200000		<5.2	<5.2

Table 18: Surface Soil Results

			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
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**			**320**	**1800**		**420**	**1000**																						
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 18: Surface Soil Results

	PAH/Phenols											Polychlorinated Biphenyls							Organochlorine Pesticides																			
	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	Pyrene	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	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	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								**11,000**																													
NEPC 2013 EILs Comm/Ind Aged								**370**																			**640**										
NEPC 2013 Table 1A(1) HILs Comm/Ind D Soil									**4000**																						**100**				**50**		**2500**
NEPC 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand																																					
0-1m								**NL**																													
1-2m								**NL**																													
2-4m								**NL**																													
>4m								**NL**																													
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_Range	Sampled_Date-Time	Matrix_Description																																			
BD1/300415	S3	0-0.15			-	-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD2/300415	S6	0-0.15			-	-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S1	S1	0-0.15			-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S2	S2	0-0.15			-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S3	S3	0-0.15			-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S4	S4	0-0.15			-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S5	S5	0-0.15			-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S6	S6	0-0.15			0.4	0.5	0.1	<0.1	0.3	<0.1	0.3	<0.1	2.7	0.2	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S7	S7	0-0.15			-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S8	S8	0-0.15			-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S9	S9	0-0.15			-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S10	S10	0-0.15			-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	S11	0-0.15			-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	S12	0-0.15			-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	S13	0-0.15			-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	S14	0-0.15			-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	S15	0-0.15			-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S16	S16	0-0.15			-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
S17	S17	0-0.15			-	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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/300415					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TS/300415					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note
Loose fibre bundles of Chrysotile asbestos identified within sample S5 (total weight 0.0005g). Which i

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-Tim**	**Matrix_Description**																		
B1	B1	-	30/04/2015	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 20: Soil (Borehole) and Dam Sediment Results

			Inorganics		Metals									PAH/Phenols		Polychlorinated Biphenyls							Organochlorine Pesticides																
			Moisture	pH (aqueous extract)	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Asbestos	Phenolics Total	Pyrene	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)
			%	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	mg/kg	mg/kg	mg/kg
EQL			0.1		4	0.4	1	1	1	0.1	1	1		5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	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					160			320	1800		420	1000																		640								
NEPC 2013 Table 1A(1) HILs Comm/Ind D Soil					3000	900		240,000	1500	730	6000	400,000																								100		
NEPC 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand																																							
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																																							
Field_ID	LocCode	Sample_Depth_Range																																					
BD1-060515	BH3	0.4-0.5	17	-	10	<1	21	22	46	<0.1	4	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD2-040515	BH15	0-0.1	12	-	8	<1	17	29	20	<0.1	8	108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD3-050515	BH10	0-0.1	18	-	10	<0.4	20	19	22	<0.1	10	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BD4-300415	BH19	0.5-0.6	17	-	6	<0.4	19	26	15	<0.1	12	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH1	BH1	0-0.1	19	-	5	<0.4	16	26	39	<0.1	12	52	NAD	<5	0.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH10	BH10	0-0.1	18	-	10	<0.4	18	16	25	<0.1	9	27	NAD	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	7.9	-	4	4	200	330	78	<0.1	150	290	NAD	<5	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	10	-	<4	<0.4	85	24	7	<0.1	77	54	NAD	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	11	-	11	<0.4	13	34	19	<0.1	16	82	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	BH13	0-0.1	12	-	5	<0.4	9	16	14	<0.1	7	34	NAD	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	13	-	7	0.4	14	41	140	0.2	8	190	NAD	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14	BH14	0-0.1	15	-	7	<0.4	11	24	16	<0.1	7	48	NAD	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	13	-	5	<0.4	15	15	43	0.2	4	37	NAD	-	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		1.4-1.5	18	-	<4	<0.4	20	9	15	<0.1	2	11	NAD	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15	BH15	0-0.1	12	-	6	<0.4	18	18	19	<0.1	10	81	NAD	<5	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	13	-	5	<0.4	27	22	14	<0.1	27	79	NAD	-	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		1.4-1.5	17	-	5	<0.4	15	30	13	<0.1	10	53	-	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16	BH16	0-0.1	13	-	<4	<0.4	20	20	13	<0.1	15	58	NAD	<5	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	<0.1	<0.1
BH17	BH17	0-0.1	21	-	7	<0.4	15	15	26	<0.1	11	37	NAD	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	4.5	-	<4	<0.4	9	54	6	<0.1	38	92	NAD	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	12	-	<4	<0.4	12	50	18	<0.1	15	65	NAD	<5	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	<0.1	<0.1
		0.5-0.6	15	5.7	6	<0.4	18	31	15	<0.1	12	27	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH2	BH2	0-0.1	17	-	6	<0.4	14	15	17	<0.1	7	21	NAD	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	20	-	5	<0.4	11	17	15	<0.1	10	28	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20	BH20	0-0.1	17	-	7	<0.4	18	21	21	<0.1	13	36	NAD	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	13	-	7	<0.4	16	15	60	0.1	5	58	NAD	<5	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	<0.1	<0.1
		0.4-0.5	15	-	8	<0.4	18	13	42	<0.1	5	42	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH4	BH4	0-0.1	17	-	5	<0.4	10	21	49	0.2	7	45	NAD	<5	1.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	24	-	10	<0.4	19	15	26	<0.1	8	25	-	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH5	BH5	0-0.1	18	-	6	<0.4	19	19	23	<0.1	8	26	NAD	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	19	7.5	7	<0.4	20	24	31	<0.1	13	55	NAD	<5	0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	15	-	6	<0.4	17	43	160	0.4	13	130	NAD	<5	1.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	13	-	6	1	16	25	50	0.1	9	62	NAD	-	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		2.4-2.5	21	-	12	0.4	16	23	62	<0.1	7	150	NAD	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH8	BH8	0-0.1	19	-	7	<0.4	18	18	24	<0.1	12	33	NAD	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	10	-	7	<0.4	8	39	16	<0.1	28	100	NAD	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	18	7.8	9	<0.4	19	21	26	<0.1	13	43	NAD	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		2.4-2.5	18	-	7	<0.4	18	22	24	<0.1	13	44	NAD	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		5.4-5.5	18	-	4	<0.4	12	18	10	<0.1	7	22	NAD	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DS1	DS1		30	-	12	0.4	19	35	27	<0.1	16	71	NAD	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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

					Organophosphorous Pesticides												Pesticides
					Heptachlor	Heptachlor epoxide	Methoxychlor	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	mg/kg	mg/kg	mg/kg
EQL					0.1	0.1	0.1	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					**50**		**2500**			**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																			
Field_ID	**LocCode**	**Sample_Depth_Range**																	
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
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
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
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
		0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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
		0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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
		0.7-0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		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
		0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		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
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
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
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
		0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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
		0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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
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
		0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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
		0.9-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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
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
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
		0.8-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		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
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
		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
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

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Table 21: Dam Water and Groundwater Results

			Metals										TPH										BTEX					
			Arsenic (Filtered)	Cadmium (Filtered)	Calcium (Filtered)	Chromium (III+VI) (Filtered)	Copper (Filtered)	Lead (Filtered)	Magnesium (Filtered)	Mercury (Filtered)	Nickel (Filtered)	Zinc (Filtered)	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)	1,2,4-trimethylbenzene
			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
EQL			0.001	0.0001	0.5	0.001	0.001	0.001	0.5	0.00005	0.001	0.001	0.05	0.1	0.1	0.05	0.01	0.05	0.1	0.1	0.01	0.01	0.001	0.001	0.001	0.002	0.001	0.001
ANZECC 2000 LOW RELIABILITY FW																												
NEPC 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Sand																												
2-4m																**NL**					**6**		**5**	**NL**	**NL**			
4-8m																**NL**					**6**		**5**	**NL**	**NL**			
NEPC 2013 Table 1C GILs, Hardness modified Fresh Waters (Dam Water)				**0.00054**			**0.0035**	**0.0136**		**0.00006**	**0.0275**	**0.02**																
NEPC 2013 Table 1C GILs, Hardness Modified Fresh Waters (Monitoring wells)				**0.002**			**0.0126**	**0.09078**		**0.00006**	**0.099**	**0.072**											**0.95**				**0.35**	
LocCode	**WellCode**	**Sampled_Date-Time**																										
BD1/150515			0.004	0.0003	-	<0.001	<0.001	<0.001	-	<0.00005	0.002	0.007	<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.1	<0.1	<0.01	<0.01	<0.001	<0.001	<0.001	<0.002	<0.001	-
BH20			0.004	0.0003	76	<0.001	0.001	<0.001	140	<0.00005	0.002	0.011	<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.1	<0.1	<0.01	<0.01	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001
BH4			<0.001	<0.0001	110	<0.001	0.001	<0.001	210	<0.00005	0.003	0.014	<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.1	<0.1	<0.01	<0.01	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001
DW1			0.001	<0.0001	19	<0.001	**0.004**	<0.001	11	<0.00005	0.001	0.014	<0.05	<0.1	<0.1	<0.05	<0.01	<0.05	<0.1	<0.1	<0.01	<0.01	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001

Note

DW1 Dam Water Sample

Table 21: Dam Water and Groundwater Results

			MAH								Chlorinated Hydrocarbo															
			1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Bromodichloromethane	Bromoform
			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
EQL			0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
ANZECC 2000 LOW RELIABILITY FW												**0.27**	**0.4**	**1.9**						**1.9**	**0.9**	**1.1**				
NEPC 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Sand																										
2-4m																										
4-8m																										
NEPC 2013 Table 1C GILs, Hardness modified Fresh Waters (Dam Water)																										
NEPC 2013 Table 1C GILs, Hardness Modified Fresh Waters (Monitoring wells)														**6.5**												
LocCode	**WellCode**	**Sampled_Date-Time**																								
BD1/150515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
BH4			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DW1			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Note

DW1 Dam Water Sample

Table 21: Dam Water and Groundwater Results

			ns													Halogenated Hydrocarbons				Halogenated Benzenes						
			Carbon tetrachloride	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	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Trichlorofluoromethane	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene
			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
EQL			0.001	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
ANZECC 2000 LOW RELIABILITY FW			**0.24**			**0.37**			**0.0008**			**0.33**	**0.07**		**0.0008**						**0.003**		**0.16**	**0.26**	**0.06**		
NEPC 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Sand																											
2-4m																											
4-8m																											
NEPC 2013 Table 1C GILs, Hardness modified Fresh Waters (Dam Water)																											
NEPC 2013 Table 1C GILs, Hardness Modified Fresh Waters (Monitoring wells)																					**0.003**	**0.085**	**0.16**	**0.26**	**0.06**		
LocCode	**WellCode**	**Sampled_Date-Time**																									
BD1/150515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20			<0.001	<0.001	<0.01	0.003	<0.01	<0.001	<0.001	<0.001	<0.001	0.002	<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
BH4			<0.001	<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
DW1			<0.001	<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

Note

DW1 Dam Water Sample

Table 21: Dam Water and Groundwater Results

					Solvents	PAH/Phenols																	
						Bromobenzene	Chlorobenzene	Hexachlorobenzene	Cyclohexane	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a)pyrene TEQ	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Phenolics Total	Pyrene	Arochlor 1016
						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
EQL						0.001	0.001	0.0002	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.05	0.0001	0.002
ANZECC 2000 LOW RELIABILITY FW																											**0.000009**
NEPC 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Sand																											
2-4m																							**NL**				
4-8m																							**NL**				
NEPC 2013 Table 1C GILs, Hardness modified Fresh Waters (Dam Water)																											
NEPC 2013 Table 1C GILs, Hardness Modified Fresh Waters (Monitoring wells)																							**0.016**				
LocCode	**WellCode**	**Sampled_Date-Time**																									
BD1/150515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-
BH20			<0.001	<0.001	<0.0002	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.5	<0.0002	<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	<0.002
BH4			<0.001	<0.001	<0.0002	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.5	<0.0002	<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	<0.002
DW1			<0.001	<0.001	<0.0002	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.5	<0.0002	<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	<0.002

Note

DW1 Dam Water Sample

Table 21: Dam Water and Groundwater Results

			Polychlorinated Biphenyls						Organochlorine Pesticides															
			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)
			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
EQL			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
ANZECC 2000 LOW RELIABILITY FW			**0.001**	**0.0003**	**0.0006**	**0.00003**	**0.00003**	**0.025**																
NEPC 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Sand																								
2-4m																								
4-8m																								
NEPC 2013 Table 1C GILs, Hardness modified Fresh Waters (Dam Water)																								
NEPC 2013 Table 1C GILs, Hardness Modified Fresh Waters (Monitoring wells)					**0.0003**		**0.00001**										**0.000006**					**0.00001**		**0.0002**
LocCode	**WellCode**	**Sampled_Date-Time**																						
BD1/150515			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20			<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
BH4			<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
DW1			<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

Note
DW1 Dam Water Sample

Table 21: Dam Water and Groundwater Results

				Organophosphorous Pesticides												Pesticides
				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
EQL				0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
ANZECC 2000 LOW RELIABILITY FW																		
NEPC 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Sand																		
2-4m																		
4-8m																		
NEPC 2013 Table 1C GILs, Hardness modified Fresh Waters (Dam Water)																		
NEPC 2013 Table 1C GILs, Hardness Modified Fresh Waters (Monitoring wells)				**0.00001**					**0.00001**		**0.00001**		**0.00015**		**0.0002**	**0.00005**		**0.000004**
LocCode	**WellCode**	**Sampled_Date-Time**																
BD1/150515				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20				<0.0002	<0.0002	<0.0002	<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				<0.0002	<0.0002	<0.0002	<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				<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

Note

DW1 Dam Water Sample

Table 22: Methane Gas Results

Sample ID	Gas Analysis				
	Sample Date	Time (T) in minutes	Initial Atmospheric Pressure (mb)	% Methane	% Carbon Dioxide
BH2	15/05/2015	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	15/05/2015	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	15/05/2015	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

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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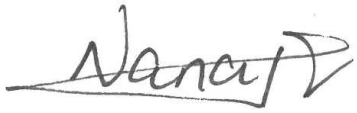
Results Approved By
Diego Bigolin, Team Leader, Inorganics
Jaimie Loa-Kum-Cheung, Metals Supervisor
Nick Sarlamis, Inorganics Supervisor
Steven Luong, Organics Supervisor

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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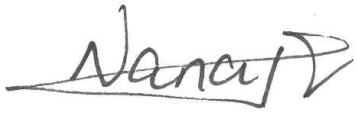
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

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
Date Received:
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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

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
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 - 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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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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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	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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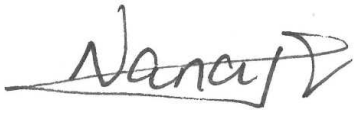
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

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
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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:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
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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
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	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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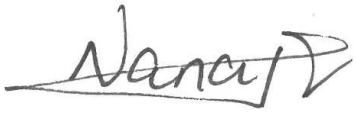
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

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
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

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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.

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
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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		✓

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.

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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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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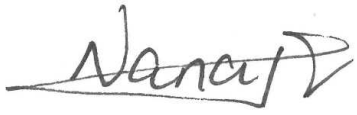
Results Approved By
Diego Bigolin, Team Leader, Inorganics
Jaimie Loa-Kum-Cheung, Metals Supervisor
Nick Sarlamis, Inorganics Supervisor
Steven Luong, Organics Supervisor

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

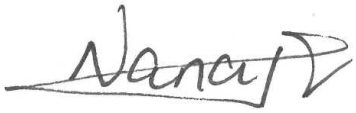
Date results requested by	25/09/2019
Date of Issue	25/09/2019

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

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.