



# **Douglas Partners**

*Geotechnics | Environment | Groundwater*

Report on  
Preliminary Site Investigation (Contamination)

Cranbrook School Redevelopment  
Victoria Road, Bellevue Hill

Prepared for  
Cranbrook School

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Integrated Practical Solutions





# Douglas Partners

Geotechnics | Environment | Groundwater

## Document History

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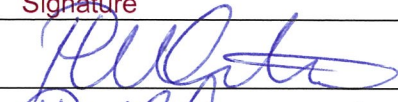
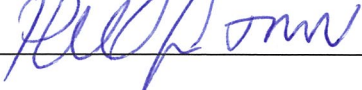
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## **Report on Preliminary Site Investigation (Contamination)**

### **Cranbrook School Redevelopment**

### **Victoria Road, Bellevue Hill**

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## **1. Introduction**

This report presents the results of a Preliminary Site Investigation (Contamination) undertaken for the proposed Cranbrook School redevelopment at Victoria Road, Bellevue Hill. The work was commissioned by Cranbrook School.

It is understood that the proposed development includes the construction of an underground sporting facility (swimming pool, sports courts) and basement parking area beneath the oval in the northern portion of the site. This will involve a deep excavation followed by the replacement of the oval on a suspended structure. A separate performing arts and indoor sporting facility (the 'Centenary Building') is also proposed to the south-east of the oval which will involve the demolition of several existing buildings followed by a deep excavation into the embankment.

The Preliminary Site Investigation was undertaken to:

- assess the previous land uses to determine the potential for soil and groundwater contamination on the site;
- provide a preliminary assessment of the suitability of the site for the proposed development; and
- provide recommendations for additional investigation, if required.

The Preliminary Site Investigation has been prepared to address the requirements of *State Environmental Planning Policy No 55 – Remediation of Land*. The overall approach for the Preliminary Site Investigation included a review of available historical information, an inspection of the site by an engineer, and a review of limited soil sampling and laboratory analysis undertaken for the project in 2015 and 2017. Details of the investigation are given in this report, as well as comments on the issues outlined above. This report has not specifically been prepared for review by a Site Auditor.

Geotechnical investigations were also undertaken for the project and are reported separately.

## **2. Site Description**

The Cranbrook School senior campus is located on the northern side of a hill that dips in a northerly direction towards Point Piper. The school is bounded by New South Head Road to the north and west, residential properties to the west, Victoria Road to the south and Rose Bay Avenue to the east. Surface levels vary from approximately RL 40 m AHD along the southern boundary to RL 15 m AHD near the northern boundary.

At the time of the investigation there were numerous buildings of varying age occupying the southern portion of the school and a large sporting oval in the northern portion. Numerous retaining structures create terrace areas down the slope and some significant embankments are also present on the site, particularly along the southern side of the oval. The location of the site is shown on Drawing C1 in Appendix B.

The school oval is located on Lots 9 to 18 in DP 9005. The area in which the Centenary Building is proposed is on Lot 1 DP 663630.

### 3. Regional Geology and Hydrogeology

The *Sydney 1:100 000 Geological Series Sheet* shows that the site is underlain by Hawkesbury Sandstone with some overlying quaternary-aged marine sands with podsols. An extract of the geological map is shown in Figure 1.

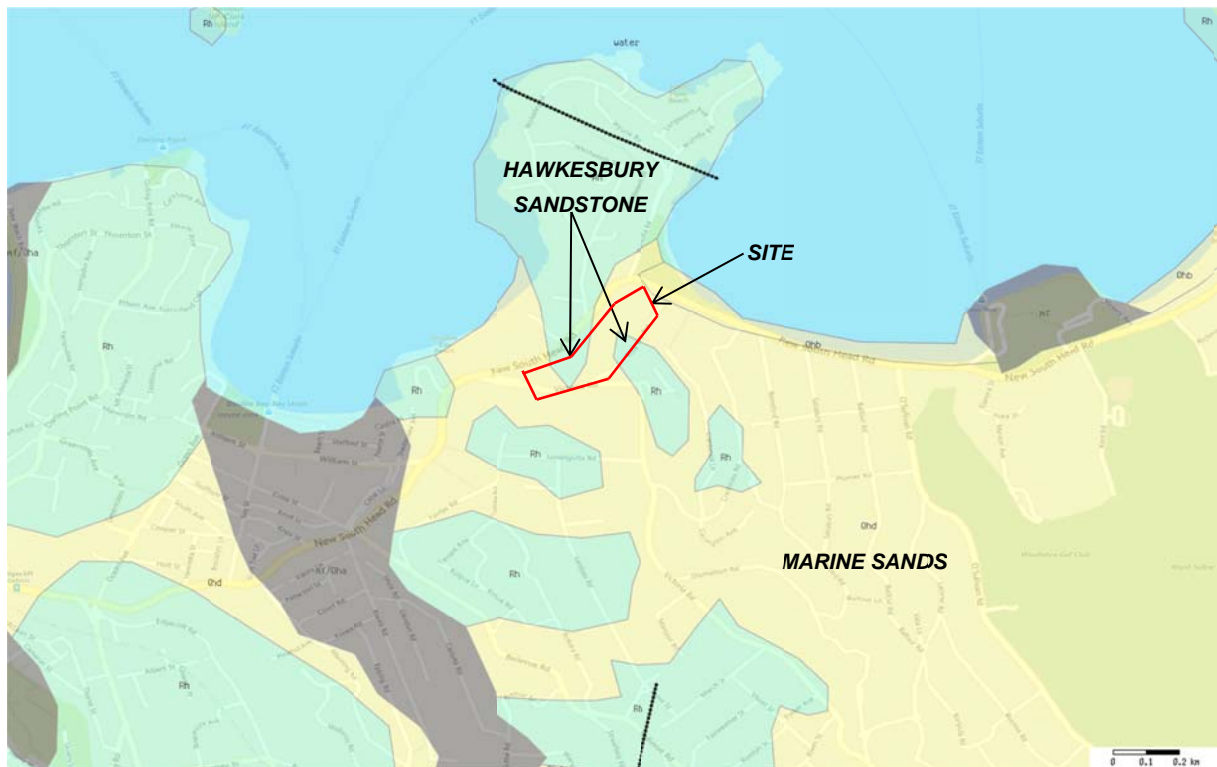


Figure 1: Extract from geological map

The topography of the site suggests that groundwater is likely to flow through the sands and along the bedrock surface towards Sydney Harbour.

## 4. Scope of Works

The scope of the Preliminary Site Investigation was as follows:

- Review various historical documents including aerial photographs, the EPA Contaminated Land register and groundwater bore licences to determine the nature of previous activities that may have occurred on the site;
- Undertake a site inspection to determine any obvious contamination risks;
- Review the results of previous sampling and laboratory analysis for a range of potential contaminants including:
  - Total recoverable hydrocarbons (TRH)
  - Benzene, Toluene, Ethylbenzene, Xylene (BTEX)
  - Polycyclic aromatic hydrocarbons (PAH)
  - Organochlorine pesticides and organophosphorus pesticides (OCP & OPP)
  - Polychlorinated biphenyls (PCB)
  - Phenol
  - Heavy metals (As, Cd, Cr, Cu, Pb, Hg, Ni and Zn)
  - Asbestos
- Provide a Preliminary Site Investigation report which comments on the historical uses of the site, the contaminant status of the samples tested, the potential for soil and groundwater contamination to be present, and provides recommendations for follow up action (if required).

## 5. Site History

### 5.1 Historical Land Uses

The site has been occupied by Cranbrook School since 1918. The site use for the previous 100 years has therefore been educational. Prior to this time it was a private residence.

### 5.2 Aerial Photographs

Aerial photographs from 1930, 1955, 1961, 1978, 1991 and 2002 were used to assess historical land-use patterns on the site. The 1930 photograph shows the school oval in the northern portion of the site and buildings in the elevated areas to the south of the oval. Trees are present where the Mansfield and War Memorial Hall buildings are now located which indicates they had yet to be constructed in 1930.

The 1955 photograph shows similar conditions to the 1930 image, although the War Memorial Hall appears to have been constructed immediately south of the oval. A small building is also evident to the north-east of the Perkins Building which may be part of the current Mansfield Building. The 1961 photograph is similar to the 1955 image.



The 1978 photograph shows the Mansfield Building between the Perkins Building and the oval. The 1991 image possibly shows the eastern extent of the Mansfield Building is yet to be completed. The 2002 image shows similar site conditions to present.

The aerial photographs are attached in Appendix C.

### 5.3 Contaminated Lands Register

The site is not identified as being significantly contaminated under the *Contaminated Lands Management Act 1997* as at 15 March 2018. Further, the site is not on the 9 February 2018 version of the 'List of NSW Contaminated Sites Notified to EPA'.

### 5.4 Licenced Groundwater Bores

A search of licenced groundwater bores indicates that a bore for irrigation purposes exists/existed near the oval. The bore was drilled to a depth of 102.5 m and the standing water level was noted at 16 m. The majority of the other bores in the area are located in the more low-lying sections of Rose Bay and Double Bay. The locations of nearby bores are shown in Figure 2.



Figure 2: Locations of licenced groundwater bores

## 6. Preliminary Conceptual Site Model

The site history information indicates that the site has been used as a school since 1918. Its use prior to the time is understood to have been as a private home and vice-regal residence known as 'Cranbrook'. Activities of an educational nature have therefore been undertaken on the site for the last 100 years.

Potentially contaminating activities that may have occurred on the site include:

- The placement of filling on the site;
- Demolition of buildings containing hazardous building materials (e.g. Lead, asbestos in the latter half of the 20<sup>th</sup> Century etc.);
- Contaminants associated with building maintenance (e.g. pesticides);
- The placement of waste and/or incinerator ash which was prevalent in urban areas throughout the 19<sup>th</sup> and early to mid-20<sup>th</sup> Century; and
- Naturally occurring elements in the soils and rock underlying the site (e.g. heavy metals).

Groundwater/seepage is likely to vary in depth. Water is expected to be encountered in areas of the site where the soil-rock interface is at or close to the excavation levels, however is likely to be at considerable depth where rock is well below the ground/excavation level. The use of groundwater within the development is not proposed. The quality of the groundwater from a land-use perspective will therefore only be of significance if volatile contaminants are present.

Soil vapour intrusion and/or ground gas will only need to be considered if significant concentrations of volatile organic compounds are encountered on the site.

The human receptors to soil contamination are likely to be the teachers, students, support staff and visitors to the school. Construction personnel, nearby workers/students/residents and the general public may also be receptors during the construction phase of the redevelopment project.

The ecological receptors are likely to be limited to the flora and fauna that grow/live on the adjacent sites. The area is not known to be ecologically significant.

Exposure pathways are expected to be limited to dermal contact with soils on the site by humans, ingestion of soils and vegetation by fauna, and phytotoxic exposure to flora.

## 7. Results of Inspection

Douglas Partners has undertaken numerous inspections of the site since 2016. The school is a well-maintained facility and obvious signs of significant contamination have not been encountered during our recent inspections/investigations.



## 8. Field Work Methods

### 8.1 2015 Investigation

The 2015 field work included the drilling of three cored boreholes (BH2, BH4 and BH10), and the drilling of four augered boreholes (BH7, BH8, BH11 and BH12).

The cored boreholes were drilled to depths of between 14.3 m and 22.2 m using a DT250 geotechnical drilling rig. They were commenced using solid flight augers to drill through the overburden materials. Disturbed soil samples were collected from the tip of the auger and Standard penetrometer tests (SPTs) were undertaken at regular depth intervals throughout the filling/soil profile. Rotary drilling equipment was used to progress the bores to prevent hole collapse at depth. Once weathered rock was encountered, NMLC-sized diamond core drilling equipment was used to obtain 50 mm diameter continuous core samples of the rock for identification and strength testing purposes.

The augered boreholes were drilled to depths of between 2.4 m and 4.1 m using a hand-auger. Dynamic penetrometer tests were also undertaken at these locations.

The locations are shown on Drawing C1 in Appendix B. The ground surface levels at the CPTs and bores were measured to AHD using an automatic level, relative to temporary benchmarks on the site.

### 8.2 April 2017 Investigation

The April 2017 field work included the drilling of seven cored boreholes (BH101 to BH107) to depths of between 12.4 m and 17.5 m using geotechnical investigation rigs. They were commenced using solid flight augers to drill through the overburden materials. Disturbed soil samples were collected from the tip of the auger and SPTs were undertaken in selected boreholes. Rotary drilling equipment was used to progress the bores to prevent hole collapse at depth. Once weathered rock was encountered, NMLC-sized diamond core drilling equipment was used to obtain 50 mm diameter continuous core samples of the rock for identification and strength testing purposes.

Twenty (20) augered boreholes (BH111 to BH130) were drilled to depths of between 2.0 m and 4.0 m using geotechnical investigation rigs. The primary purpose of these boreholes was to collect samples for laboratory analysis associated with soil contamination assessment.

Two temporary groundwater wells (BH101 and BH106) were installed on the site following completion of drilling. The purpose of these wells was to allow groundwater level measurements to be made.

The test locations are shown on Drawing C1 in Appendix B. The ground surface levels have been measured relative to AHD using either an automatic level or a high-precision differential global positioning system (dGPS) receiver.

## 9. Field Work Results

The subsurface conditions encountered during the previous investigations are presented in the borehole logs in Appendix D. Notes defining descriptive terms and classification methods are included in Appendix A.

The boreholes typically encountered:

- **FILLING** – typically silty sand, sand and silty clay filling to depths of between 0.2 m and 4.0 m;
- **NATURAL SOILS** – sand/silty sand to depths of between 4.1 m and 20.5 m. The sand varies from very loose to loose in some areas of the site, to medium dense to dense in others. A thin layer of clayey material (probably weathered rock) was encountered in the base of several tests;
- **BEDROCK** – sandstone which was typically low, medium and high strength, with some weaker bands, to the base of the cored bores at depths of between 12.4 m and 28.2 m.

Groundwater was observed at depths of between 3.7 m and 9.4 m (RL 6.7 m to RL 12.8 m AHD) in several boreholes during the time of the field work. Groundwater level measurements made during a recent site visit are provided in Table 2.

**Table 2: Groundwater Level Measurements in Monitoring Wells**

Date	Groundwater Observations in Wells (RL, m AHD)	
	BH101	BH106
12 Feb 2018	<3.5*	<21.6*

Note: \*Well was dry therefore groundwater level is below these RLs

## 10. Laboratory Testing

EnviroLab Services Pty Ltd (EnviroLab) was commissioned to undertake the analysis of the soil samples. A summary of the results is provided in the following tables which are included in Appendix E:

- Table E1: Contaminant Concentrations in Filling
- Table E2: Contaminant Concentrations in Natural Soil

The detailed report sheets and chain-of-custody documentation are also included in Appendix E.

## 11. Selected Comparative Criteria

The *National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater* (NEPC, 2013) provides assessment levels for various soil, groundwater and vapour contaminants. The site is assumed to be a category 'C' site (i.e. HIL C) which uses include secondary schools.

Ecological-based assessment is based on the relevant screening levels/added concentrations for coarse-grained sites due to the sandy nature of the upper soil profile.

The preliminary quantitative site assessment criteria adopted are shown in Table E3 in Appendix E.

## 12. Conclusions and Recommendations

On the basis of the results of this Preliminary Site Investigation, the main contamination risks are considered to be associated with school operations including previous development works, day-to-day operations and maintenance. The laboratory testing indicates that the contaminant concentrations in the soil samples analysed were within the adopted health-based investigation levels. One sample (BH10/1.0 m) exceeded the ecological-based investigation level for carcinogenic PAHs (2.3 mg/kg), however this is considered insignificant as all other samples were within the adopted criterion which is a very conservative value in any case.

The use of groundwater is not currently proposed and groundwater will be handled using a drainage system, where required. The risk of groundwater contamination impacting upon the development is therefore considered to be low.

On the basis of the investigation undertaken to date it is considered that the risk of significant contamination being present, that prevents the redevelopment of the site without significant remediation, is low.

If any contamination is identified during construction (e.g. waste filling) then an appropriate response will need to be developed by an environmental consultant and actioned on site to ensure site suitability. This could be undertaken by enacting an Unexpected Finds Protocol (UFP) as part of the Construction Environmental Management Plan (CEMP).

Any materials required to be removed from the site will need to be classified in accordance with the current *Waste Classification Guidelines* (NSW EPA, 2014).

## 13. Limitations

Douglas Partners Pty Ltd (DP) has prepared this report for a redevelopment project at Cranbrook School, Bellevue Hill in accordance with DP's ongoing commission for this project. The report is provided for the use of Cranbrook School for this project only and for the purpose(s) described in the report. It should not be used for other projects or by a third party.

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

This report must be read in conjunction with all of the attached notes 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 given 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.

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**Douglas Partners Pty Ltd**

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## Appendix A

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About this Report

# 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.





## 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

# *Sampling Methods*

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 based on Australian Standard AS 1726, Geotechnical Site Investigations Code. 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	20 - 63
Medium gravel	6 - 20
Fine gravel	2.36 - 6
Coarse sand	0.6 - 2.36
Medium sand	0.2 - 0.6
Fine sand	0.075 - 0.2

The proportions of secondary constituents of soils are described as:

Term	Proportion	Example
And	Specify	Clay (60%) and Sand (40%)
Adjective	20 - 35%	Sandy Clay
Slightly	12 - 20%	Slightly Sandy Clay
With some	5 - 12%	Clay with some sand
With a trace of	0 - 5%	Clay with a trace of sand

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

## 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

## 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	SPT N value	CPT qc value (MPa)
Very loose	vl	<4	<2
Loose	l	4 - 10	2 - 5
Medium dense	md	10 - 30	5 - 15
Dense	d	30 - 50	15 - 25
Very dense	vd	>50	>25

# *Soil Descriptions*

## **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;
- Transported soils - formed somewhere else and transported by nature to the site; or
- Filling - moved by man.

Transported soils may be further subdivided into:

- Alluvium - river deposits
- Lacustrine - lake deposits
- Aeolian - wind deposits
- Littoral - beach deposits
- Estuarine - tidal river deposits
- Talus - scree or coarse colluvium
- Slopewash or Colluvium - transported downslope by gravity assisted by water. Often includes angular rock fragments and boulders.



## Rock Strength

Rock strength is defined by the Point Load Strength Index ( $Is_{(50)}$ ) and 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 test procedure is described by Australian Standard 4133.4.1 - 1993. The terms used to describe rock strength are as follows:

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

\* Assumes a ratio of 20:1 for UCS to  $Is_{(50)}$

## Degree of Weathering

The degree of weathering of rock is classified as follows:

Term	Abbreviation	Description
Extremely weathered	EW	Rock substance has soil properties, i.e. it can be remoulded and classified as a soil but the texture of the original rock is still evident.
Highly weathered	HW	Limonite staining or bleaching affects whole of rock substance and other signs of decomposition are evident. Porosity and strength may be altered as a result of iron leaching or deposition. Colour and strength of original fresh rock is not recognisable
Moderately weathered	MW	Staining and discolouration of rock substance has taken place
Slightly weathered	SW	Rock substance is slightly discoloured but shows little or no change of strength from fresh rock
Fresh stained	Fs	Rock substance unaffected by weathering but staining visible along defects
Fresh	Fr	No signs of decomposition or staining

## 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 some fragments
Fractured	Core lengths of 40-200 mm with some shorter and longer sections
Slightly Fractured	Core lengths of 200-1000 mm with some shorter and longer sections
Unbroken	Core lengths mostly > 1000 mm

# Rock Descriptions

## Rock Quality Designation

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

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

where 'sound' rock is assessed to be rock of low strength or better. 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 <sub>50</sub>	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

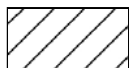
### Soils



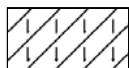
Topsoil



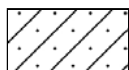
Peat



Clay



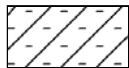
Silty clay



Sandy clay



Gravelly clay



Shaly clay



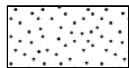
Silt



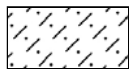
Clayey silt



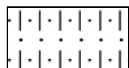
Sandy silt



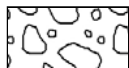
Sand



Clayey sand



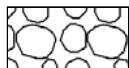
Silty sand



Gravel



Sandy gravel

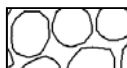


Cobbles, boulders



Talus

### Sedimentary Rocks



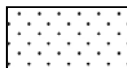
Boulder conglomerate



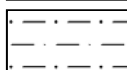
Conglomerate



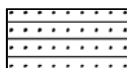
Conglomeratic sandstone



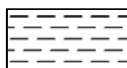
Sandstone



Siltstone



Laminite



Mudstone, claystone, shale

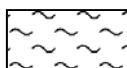


Coal

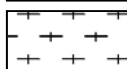


Limestone

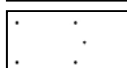
### Metamorphic Rocks



Slate, phyllite, schist

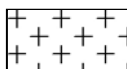


Gneiss

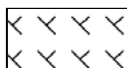


Quartzite

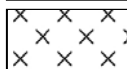
### Igneous Rocks



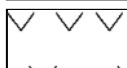
Granite



Dolerite, basalt, andesite



Dacite, epidote



Tuff, breccia



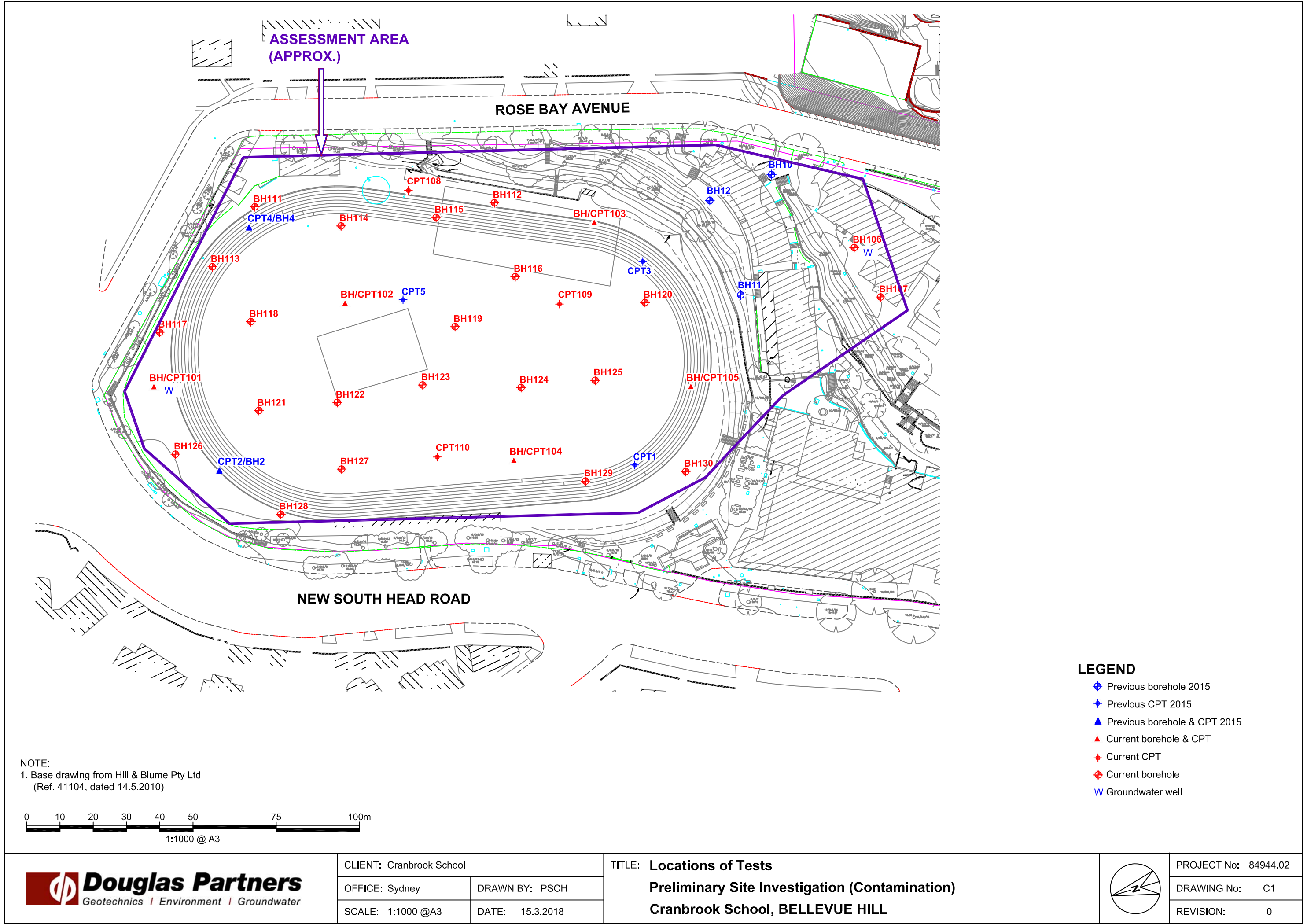
Porphyry

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## Appendix B

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Drawing



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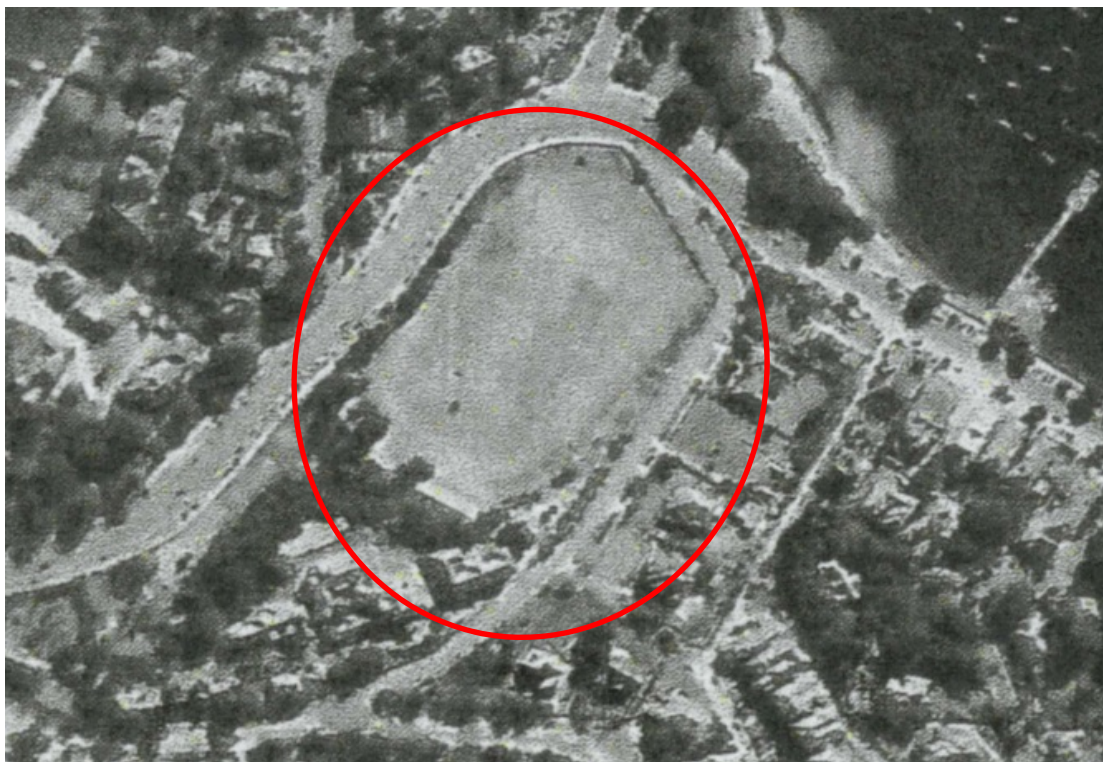
## Appendix C

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### Site History Information



Aerial photograph from 1930



Aerial photograph from 1955



## Historical Aerial Photographs

Cranbrook School

**BELLEVUE HILL**

CLIENT: Cranbrook School

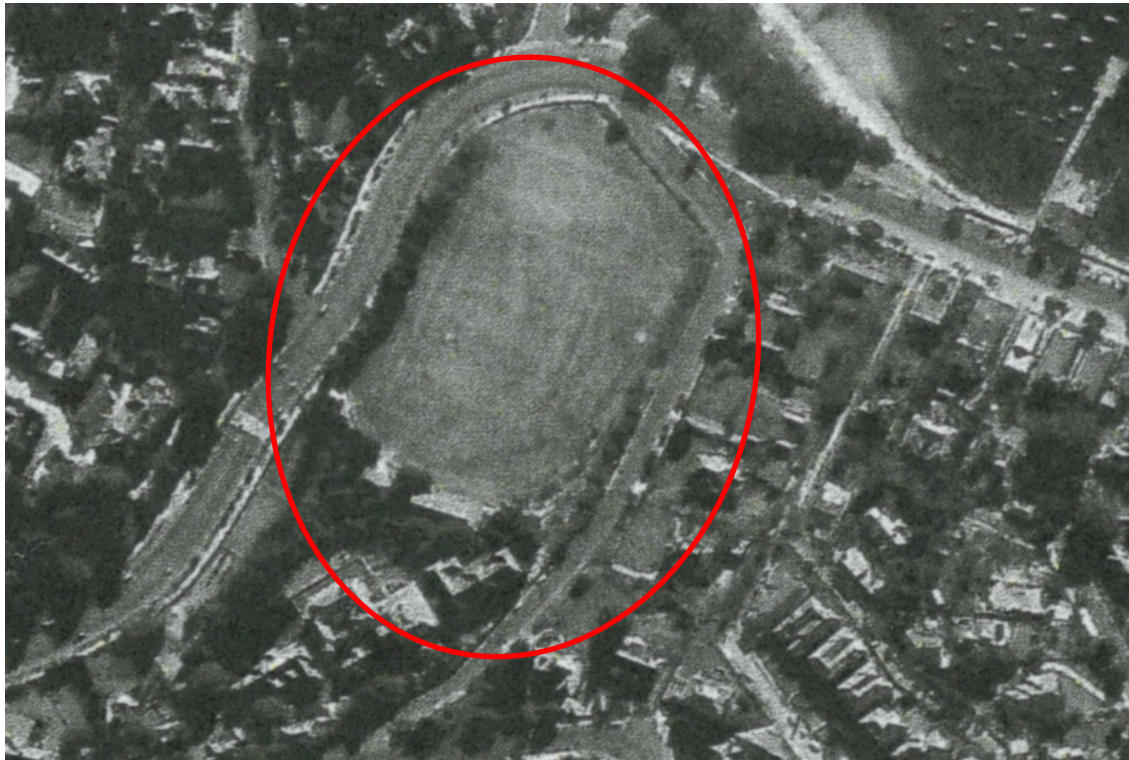
PROJECT: 84944.02

PLATE No: A1

REV: 0

DATE: 15-Mar-18





Aerial photograph from 1961



Aerial photograph from 1978



## Historical Aerial Photographs

Cranbrook School

**BELLEVUE HILL**

CLIENT: Cranbrook School

PROJECT: 84944.02

PLATE No: A2

REV: 0

DATE: 15-Mar-18



Aerial photograph from 1991



Aerial photograph from 2002



# **Historical Aerial Photographs**

**Cranbrook School**

**BELLEVUE HILL**

CLIENT: Cranbrook School

PROJECT: 84944.02

PLATE No: A3

REV: 0

DATE: 15-Mar-18



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## Appendix D

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Field Work Results

# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.13 AHD  
**EASTING:** 338378.84  
**NORTHING:** 6250846.18  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH101  
**PROJECT No:** 84944.01  
**DATE:** 12/4/2017  
**SHEET** 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering					Graphic Log	Rock Strength					Water	Fracture Spacing (m)				Discontinuities		Sampling & In Situ Testing																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
			EW	HW	MW	SW	FS		FR	Ex Low	Very Low	Low	Medium		High	Very High	Ex High	0.01	0.05	0.10	0.50	1.00	B - Bedding S - Shear	J - Joint F - Fault	Type	Core Rec. %	RQD %	Test Results & Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
16	0.4	TOPSOIL - dark brown, fine to medium silty sand topsoil, moist																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								</

**RIG:** Scout 2

**DRILLER:** JS

**LOGGED:** SI/RW

**CASING:** HW to 5.4m

**TYPE OF BORING:** Solid flight auger to 5.5m; Rotary to 14.35m; NMLC-Coring to 17.4m

**WATER OBSERVATIONS:** No free groundwater observed whilst augering

**REMARKS:** Standpipe installed to 13.7m (screen 10.7-13.7m; gravel 9.7-13.7m; bentonite 8.7-9.7m; backfill to 0.1m below ground level; grass over 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	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	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)

# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.13 AHD  
**EASTING:** 338378.84  
**NORTHING:** 6250846.18  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH101  
**PROJECT No:** 84944.01  
**DATE:** 12/4/2017  
**SHEET 2 OF 2**

RL	Depth (m)	Description of Strata	Degree of Weathering					Graphic Log	Rock Strength					Water	Fracture Spacing (m)				Discontinuities		Sampling & In Situ Testing						
			EW	HW	MW	SW	FS		FR	Ex Low	Very Low	Low	Medium		High	Very High	Ex High	0.01	0.05	0.10	0.50	1.00	B - Bedding S - Shear	J - Joint F - Fault	Type	Core Rec. %	RQD %
6		SAND - yellow-brown, fine to medium sand, dry to moist <i>(continued)</i>																									
11																											
5																											
12																											
4																											
13																											
3																											
14																											
2																											
14.35		SANDSTONE - medium and high strength, moderately weathered, slightly fractured and unbroken, red-brown and brown, medium to coarse grained sandstone																									
15																											
1																											
16																											
0																											
17																											
-1																											
17.4		Bore discontinued at 17.4m																									
18																											
-2																											
19																											
-3																											

**RIG:** Scout 2

**DRILLER:** JS

**LOGGED:** SI/RW

**CASING:** HW to 5.4m

**TYPE OF BORING:** Solid flight auger to 5.5m; Rotary to 14.35m; NMLC-Coring to 17.4m

**WATER OBSERVATIONS:** No free groundwater observed whilst augering

**REMARKS:** Standpipe installed to 13.7m (screen 10.7-13.7m; gravel 9.7-13.7m; bentonite 8.7-9.7m; backfill to 0.1m below ground level; grass over 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	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	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)

# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.28 AHD  
**EASTING:** 338374.19  
**NORTHING:** 6250784.3  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH102  
**PROJECT No:** 84944.01  
**DATE:** 12/4/2017  
**SHEET** 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering						Graphic Log	Rock Strength					Water	Fracture Spacing (m)				Discontinuities		Sampling & In Situ Testing							
			EW	HW	MW	SW	FS	FR		Ex Low	Very Low	Low	Medium	High		Very High	Ex High	0.01	0.05	0.10	0.50	1.00	B - Bedding S - Shear	J - Joint F - Fault	Type	Core Rec. %	RQD %	Test Results & Comments	
16.28	0.2	TOPSOIL - dark brown, fine to medium silty sand topsoil, dry to moist																								A/E			
15.68	0.6	FILLING - dark brown, fine to medium sand filling with clay, dry																								A/E			
15.11	1.1	SAND - dark brown, fine to medium sand, dry to moist (possibly filling)																								A/E			
14.4	1.4	SAND - grey fine to medium sand, dry to moist																								A/E			
14.0	1.8	1.4m: as above but becoming yellow-brown 1.8m: as above but grey-brown																								A/E			
13.6																													
13.2																													
12.8																													
12.4																													
12.0																													
11.6																													
11.2																													
10.8																													
10.4																													
10.0																													
9.6																													
9.2																													
8.8																													
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7.6																													
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5.6																													
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3.6																													
3.2																													
2.8																													
2.4																													
2.0																													
1.6																													
1.2																													
0.8																													
0.4																													
0.0																													

**RIG:** Scout 2      **DRILLER:** JS      **LOGGED:** SI/RW      **CASING:** HW 11.6m  
**TYPE OF BORING:** Solid flight auger (TC-bit) to 5.5m; Rotary to 11.6m; NMLC-Coring to 17.45m  
**WATER OBSERVATIONS:** No free groundwater observed whilst augering  
**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	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)

# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.28 AHD  
**EASTING:** 338374.19  
**NORTHING:** 6250784.3  
**DIP/AZIMUTH:** 90°/-

**BORE No:** BH102  
**PROJECT No:** 84944.01  
**DATE:** 12/4/2017  
**SHEET 2 OF 2**

RL	Depth (m)	Description of Strata	Degree of Weathering					Graphic Log	Rock Strength					Water	Fracture Spacing (m)	Discontinuities	Sampling & In Situ Testing																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
			EW	HW	MW	SW	FS		FR	Ex Low	Very Low	Low	Medium			High	Very High	Ex High	B - Bedding S - Shear	J - Joint F - Fault	Type	Core Rec. %	RQD %	Test Results & Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
6		SAND - grey fine to medium sand, dry to moist <i>(continued)</i>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	

**RIG:** Scout 2

**DRILLER:** JS

**LOGGED:** SI/RW

**CASING:** HW 11.6m

**TYPE OF BORING:** Solid flight auger (TC-bit) to 5.5m; Rotary to 11.6m; NMLC-Coring to 17.45m

**WATER OBSERVATIONS:** No free groundwater observed whilst augering

**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	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	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)



**Douglas Partners**  
 Geotechnics | Environment | Groundwater

# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.75 AHD  
**EASTING:** 338361.5  
**NORTHING:** 6250706.3  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH103  
**PROJECT No:** 84944.01  
**DATE:** 11/4/2017  
**SHEET** 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering					Graphic Log	Rock Strength					Water	Fracture Spacing (m)				Discontinuities		Sampling & In Situ Testing																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
			EW	HW	MW	SW	FS		FR	Ex Low	Very Low	Low	Medium		High	Very High	Ex High	0.01	0.05	0.10	0.50	1.00	B - Bedding S - Shear	J - Joint F - Fault	Type	Core Rec. %	RQD %	Test Results & Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
	0.5	TOPSOIL - dark brown, silty clay topsoil with rootlets, dry																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			

Note: Unless otherwise stated, rock is fractured along rough planar bedding dipping 0° - 10°

8.96m: B0° - 5°, un, ro, fe stn  
 9.45m: J20°, pl, ro, fe stn  
 9.6m: Cs, 50mm  
 9.65m: CORE LOSS:

**RIG:** Scout 2 **DRILLER:** JS **LOGGED:** RW/JN **CASING:** HQ to 8.5m  
**TYPE OF BORING:** Solid flight auger (TC-bit) to 8.5m; NMLC-Coring to 14.4m  
**WATER OBSERVATIONS:** No free groundwater observed whilst augering  
**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	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	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)

# BOREHOLE LOG

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**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.75 AHD  
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**NORTHING:** 6250706.3  
**DIP/AZIMUTH:** 90°/-

**BORE No:** BH103  
**PROJECT No:** 84944.01  
**DATE:** 11/4/2017  
**SHEET 2 OF 2**

RL	Depth (m)	Description of Strata	Degree of Weathering					Graphic Log	Rock Strength					Water	Fracture Spacing (m)	Discontinuities	Sampling & In Situ Testing				
			EW	HW	MW	SW	FS		FR	Ex Low	Very Low	Low	Medium			High	Very High	Ex High	B - Bedding S - Shear	J - Joint F - Fault	Type
	6	SANDSTONE - medium strength, slightly weathered then fresh stained, fractured and slightly fractured, light grey, medium grained sandstone with some extremely low and very low strength bands and traces of carbonaceous laminations ( <i>continued</i> )																			
	11																				
	12																				
	12.52																				
	13																				
	12.97																				
	14																				
	14.4	Bore discontinued at 14.4m - target depth reached																			
	15																				
	16																				
	17																				
	18																				
	19																				

**RIG:** Scout 2      **DRILLER:** JS      **LOGGED:** RW/JN      **CASING:** HQ to 8.5m  
**TYPE OF BORING:** Solid flight auger (TC-bit) to 8.5m; NMLC-Coring to 14.4m  
**WATER OBSERVATIONS:** No free groundwater observed whilst augering  
**REMARKS:**

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



# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.34 AHD  
**EASTING:** 338308.87  
**NORTHING:** 6250760.78  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH104  
**PROJECT No:** 84944.01  
**DATE:** 12/4/2017  
**SHEET** 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering					Graphic Log	Rock Strength					Water	Fracture Spacing (m)				Discontinuities		Sampling & In Situ Testing				
			EW	HW	MW	SW	FR		Ex Low	Very Low	Low	Medium	High		Very High	Ex High	0.01	0.05	0.10	0.50	1.00	B - Bedding S - Shear	J - Joint F - Fault	Type	Core Rec. %
16	0.2	TOPSOIL - dark brown, fine to medium silty sand topsoil, moist																				A/E			
16		SAND - dark brown mottled brown, iron indurated, fine to medium sand, moist (possibly filling)																				A/E			
1		0.8m: as above but brown and grey-brown mottled dark brown																				A/E			
15	1.3	SAND - yellow brown mottled brown and dark brown, grey fine to medium sand, moist																				A/E			
2																									
14																									
3																									
13																									
4																									
12																									
5																									
11																									
6																									
10																									
7	6.8	SANDSTONE - medium strength, moderately weathered, fractured and slightly fractured, light grey and red-brown, medium grained sandstone																							PL(A) = 0.71
9	6.9																								PL(A) = 0.36
8	8.0	SANDSTONE - high strength, fresh, slightly fractured and unbroken, light grey, medium grained sandstone																			C	97	90		PL(A) = 1.19
8																									
9																									
7																									
																			</						

**RIG:** DT100

**DRILLER: SS**

**LOGGED:** RW/SI

**CASING:** HW to 6.8m

**TYPE OF BORING:** Solid flight auger (TC-bit) to 5.5m; Rotary to 6.8m; NMLC-Coring to 12.4m

**WATER OBSERVATIONS:** Free groundwater observed at 5.0m whilst augering

REMARKS:

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



**Douglas Partners**  
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# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.34 AHD  
**EASTING:** 338308.87  
**NORTHING:** 6250760.78  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH104  
**PROJECT No:** 84944.01  
**DATE:** 12/4/2017  
**SHEET 2 OF 2**

[illegible]

**RIG:** DT100

**DRILLER: SS**

**LOGGED: RW/SI**

**CASING:** HW to 6.8m

**TYPE OF BORING:** Solid flight auger (TC-bit) to 5.5m; Rotary to 6.8m; NMLC-Coring to 12.4m

**WATER OBSERVATIONS:** Free groundwater observed at 5.0m whilst augering

REMARKS:

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



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# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.54 AHD  
**EASTING:** 338303.82  
**NORTHING:** 6250703.09  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH105  
**PROJECT No:** 84944.01  
**DATE:** 10/4/2017  
**SHEET** 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering					Graphic Log	Rock Strength					Water	Fracture Spacing (m)	Discontinuities		Sampling & In Situ Testing			
			EW	HW	MW	SW	FS		FR	Ex Low	Very Low	Low	Medium			High	Very High	Ex High	B - Bedding S - Shear	J - Joint F - Fault	Type
16	0.6	TOPSOIL - dark brown, silty sand topsoil filling with some rootlets, damp																A/E			
1		SAND - grey-brown medium sand with some coarse graining, moist (possible filling)																A/E			
1.5		SAND - brown to dark brown medium sand, damp (possible filling)																A/E			
2																					
2.7		SAND - light brown to orange-brown medium sand, damp																A/E			
3																					
4																					
4.1		4.1m: becoming extremely weathered sandstone																			
4.15																					
4.3		SANDSTONE - medium strength, moderately to slightly weathered, slightly fractured, light grey-brown to red-brown, medium grained sandstone																			
5																					
6																					
7																					
8																					
8																					
9																					
7																					

**RIG:** Scout 2 **DRILLER:** JS **LOGGED:** RM/SI **CASING:** HQ to 4.1m  
**TYPE OF BORING:** Solid flight auger (TC-bit) to 4.1m; NMLC-Coring to 15.48m  
**WATER OBSERVATIONS:** Some seepage from 0.5m  
**REMARKS:**

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	G	Gas sample
B	Bulk sample	P	Piston sample
BLK	Block sample	U	Tube sample (x mm dia.)
C	Core drilling	W	Water sample
D	Disturbed sample	>	Water seep
E	Environmental sample	≡	Water level
		PID	Photo ionisation detector (ppm)
		PL(A)	Point load axial test Is(50) (MPa)
		PL(D)	Point load diametral test Is(50) (MPa)
		pp	Pocket penetrometer (kPa)
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		V	Shear vane (kPa)

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**LOCATION:** New South Head Road, Bellevue Hill

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**DATE:** 10/4/2017  
**SHEET 2 OF 2**

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			EW	HW	MW	SW	FS	FR		Ex Low	Very Low	Low	Medium	High	Very High			Ex High	B - Bedding S - Shear	J - Joint F - Fault	Type	Core Rec. %	RQD %	Test Results & Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
		SANDSTONE - medium and high strength, moderately to slightly weathered and fresh, slightly fractured, light grey-brown, medium grained sandstone <i>(continued)</i> 10.35-10.66m: very low strength 10.66-10.96m: extremely low strength  SANDSTONE - high then medium strength, slightly weathered and fresh, slightly fractured and unbroken, light grey to light grey-brown, medium grained sandstone with some extremely low to very low strength bands																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		</

**RIG:** Scout 2      **DRILLER:** JS      **LOGGED:** RM/SI      **CASING:** HQ to 4.1m  
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**WATER OBSERVATIONS:** Some seepage from 0.5m  
**REMARKS:**

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

# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 38.47 AHD  
**EASTING:** 338318.63  
**NORTHING:** 6250640.39  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH106  
**PROJECT No:** 84944.01  
**DATE:** 12/4/2017  
**SHEET** 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering					Graphic Log	Rock Strength					Water	Fracture Spacing (m)				Discontinuities		Sampling & In Situ Testing																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
			EW	HW	MW	SW	FS		FR	Ex Low	Very Low	Low	Medium		High	Very High	Ex High	0.01	0.05	0.10	0.50	1.00	B - Bedding S - Shear	J - Joint F - Fault	Type	Core Rec. %	RQD %	Test Results & Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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**RIG:** Bobcat

**DRILLER:** GM

**LOGGED:** JN

**CASING:** HW to 8.5m; HQ to 12.45m

**TYPE OF BORING:** Solid flight auger (TC-bit) to 8.5m; Rotary (mud) to 12.45m; NMLC-Coring to 15.55m

**WATER OBSERVATIONS:** No free groundwater observed whilst augering

**REMARKS:** Standpipe installed to 12.5m (screen 9.5-12.5m; gravel 8.5-12.5m; backfill to GL with 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	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)

# BOREHOLE LOG

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**LOCATION:** New South Head Road, Bellevue Hill

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**NORTHING:** 6250640.39  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH106  
**PROJECT No:** 84944.01  
**DATE:** 12/4/2017  
**SHEET 2 OF 2**

RL	Depth (m)	Description of Strata	Degree of Weathering						Graphic Log	Rock Strength					Water	Fracture Spacing (m)				Discontinuities		Sampling & In Situ Testing						
			EW	HW	MW	SW	FS	FR		Ex Low	Very Low	Low	Medium	High		Very High	Ex High	0.01	0.05	0.10	0.50	1.00	B - Bedding S - Shear	J - Joint F - Fault	Type	Core Rec. %	RQD %	Test Results & Comments
28	11	SAND - dense, yellow medium grained sand, moist ( <i>continued</i> ) 10.0m: becoming wet																									10,17,19 N = 36	
27	12																										10,14,18 N = 32	
26	12.45																											
13	25	SANDSTONE - medium then low strength, slightly weathered then fresh stained, slightly fractured then unbroken, orange and light grey medium grained sandstone with traces of very low strength bands																									PL(A) = 0.63	
14	24																											PL(A) = 0.56
15	23																											PL(A) = 0.53
15.55	16	Bore discontinued at 15.55m - target depth reached																									PL(A) = 0.28	
17	22																											
18	21																											
19	20																											
19	19																											

**RIG:** Bobcat **DRILLER:** GM **LOGGED:** JN **CASING:** HW to 8.5m; HQ to 12.45m  
**TYPE OF BORING:** Solid flight auger (TC-bit) to 8.5m; Rotary (mud) to 12.45m; NMLC-Coring to 15.55m  
**WATER OBSERVATIONS:** No free groundwater observed whilst augering  
**REMARKS:** Standpipe installed to 12.5m (screen 9.5-12.5m; gravel 8.5-12.5m; backfill to GL with gatic cover)

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

# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 39.22 AHD  
**EASTING:** 338301.69  
**NORTHING:** 6250640.1  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH107  
**PROJECT No:** 84944.01  
**DATE:** 13/4/2017  
**SHEET** 1 OF 2

[illegible]

**RIG:** Bobcat

**DRILLER:** GM

LOGGED: JN

**CASING:** HW to 4.9m; HQ to 4.9m

**TYPE OF BORING:** Solid flight auger (TC-bit) to 4.9m; NMLC-Coring to 14.0m

**WATER OBSERVATIONS:** No free groundwater observed whilst augering

REMARKS:

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



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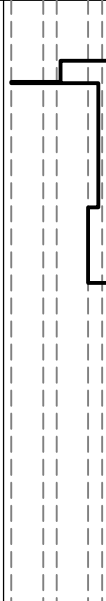


# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 39.22 AHD  
**EASTING:** 338301.69  
**NORTHING:** 6250640.1  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH107  
**PROJECT No:** 84944.01  
**DATE:** 13/4/2017  
**SHEET 2 OF 2**

RL	Depth (m)	Description of Strata	Degree of Weathering					Graphic Log	Rock Strength					Water	Fracture Spacing (m)	Discontinuities	Sampling & In Situ Testing							
			EW	HW	MW	SW	FS		FR	Ex Low	Very Low	Low	Medium			High	Very High	Ex High	B - Bedding S - Shear	J - Joint F - Fault	Type	Core Rec. %	RQD %	Test Results & Comments
29		SANDSTONE - medium strength, fresh, slightly fractured then unbroken, light grey medium grained sandstone with traces of carbonaceous laminations (continued)														10.4m: B0°, pl, ro, cly, 1mm 10.54m: Cs, 10mm  11.37m: B5°, pl, ro, cly, 2mm  11.87m: B5°, pl, ro, fe stn	C	100	100	PL(A) = 0.5				
11																								
28																								PL(A) = 0.49
12																								PL(A) = 0.71
27																								
13																								
26																								
14	14.0	Bore discontinued at 14.0m - target depth reached																						
25																								
15																								
24																								
16																								
23																								
17																								
22																								
18																								
21																								
19																								
20																								

**RIG:** Bobcat

**DRILLER:** GM

**LOGGED:** JN

**CASING:** HW to 4.9m; HQ to 4.9m

**TYPE OF BORING:** Solid flight auger (TC-bit) to 4.9m; NMLC-Coring to 14.0m

**WATER OBSERVATIONS:** No free groundwater observed whilst augering

**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	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	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)



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# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.28 AHD  
**EASTING:** 338412.68  
**NORTHING:** 6250794.55  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH111  
**PROJECT No:** 84944.01  
**DATE:** 13/4/2017  
**SHEET** 1 OF 1

[illegible]

**RIG:** DT100

**DRILLER: SS**

LOGGED: AT

**CASING:** Uncased

**TYPE OF BORING:** Auger to 3.1m

**WATER OBSERVATIONS:** No free groundwater observed

REMARKS:

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



# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.61 AHD  
**EASTING:** 338380.55  
**NORTHING:** 6250730.19  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH112  
**PROJECT No:** 84944.01  
**DATE:** 11/4/2017  
**SHEET** 1 OF 1

[illegible]

**RIG:** DT100

**DRILLER: SS**

**LOGGED: RW**

**CASING:** Uncased

**TYPE OF BORING:** Auger to 2.0m

**WATER OBSERVATIONS:** No free groundwater observed

REMARKS:

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



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# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.22 AHD  
**EASTING:** 338402.54  
**NORTHING:** 6250814  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH113  
**PROJECT No:** 84944.01  
**DATE:** 13/4/2017  
**SHEET** 1 OF 1

[illegible]

**RIG:** DT100

**DRILLER: SS**

LOGGED: AT

**CASING:** Uncased

**TYPE OF BORING:** Auger to 3.0m

**WATER OBSERVATIONS:** No free groundwater observed

REMARKS:

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



# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.40 AHD  
**EASTING:** 338395.64  
**NORTHING:** 6250774.08  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH114  
**PROJECT No:** 84944.01  
**DATE:** 11/4/2017  
**SHEET** 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
16 15 14 13 12 11 10 9 8 7	0.2	TOPSOIL - dark brown, fine to medium silty sand topsoil, moist		A/E	0.1					
		SAND - dark brown mottled-brown, fine to medium sand, moist (possibly filling)		A/E	0.5					
				A/E	1.0					
	1.8	SAND - dark brown mottled yellow-brown, fine to medium sand with iron indurated pockets, moist		A/E	2.0					
	3.0	Bore discontinued at 3.0m - target depth reached		A/E	3.0					

**RIG:** Scout 2

**DRILLER:** JS

**LOGGED:** RW

**CASING:** Uncased

**TYPE OF BORING:** Auger to 3.0m

**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	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	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)

# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.43 AHD  
**EASTING:** 338384.73  
**NORTHING:** 6250747.66  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH115  
**PROJECT No:** 84944.01  
**DATE:** 11/4/2017  
**SHEET** 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
	0.3	TOPSOIL - dark brown, fine to medium silty sand topsoil, dry to moist		A/E	0.1					
		SAND - grey-brown, fine to medium sand, dry to moist (possibly filling)		A/E	0.5					
		0.8m: as above but becoming dark brown and grey-brown								
	1.1	SAND - pale grey, fine to medium sand, dry to moist		A/E	1.0					
	2.0	Bore discontinued at 2.0m - target depth reached		A/E	2.0					

**RIG:** DT100

**DRILLER:** SS

**LOGGED:** RW

**CASING:** Uncased

**TYPE OF BORING:** Auger to 2.0m

**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	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	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)

# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.45 AHD  
**EASTING:** 338357.98  
**NORTHING:** 6250734.72  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH116  
**PROJECT No:** 84944.01  
**DATE:** 11/4/2017  
**SHEET** 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
	0.3	TOPSOIL - dark brown, fine to medium silty sand topsoil, dry to moist		A/E	0.1					
	0.7	SAND - dark brown and yellow-brown, fine to medium sand, dry to moist (possibly filling)		A/E	0.5					
	1.0	SAND - dark grey, fine to medium sand, moist		A/E	1.0					
	1.5m	1.5m: as above but becoming pale grey								
	2.2	SAND - dark brown mottled brown, fine to medium sand, iron indurated, dry to moist		A/E	2.0					
	3.0	Bore discontinued at 3.0m - target depth reached		A/E	3.0					

**RIG:** DT100

**DRILLER:** SS

**LOGGED:** RW

**CASING:** Uncased

**TYPE OF BORING:** Auger to 3.0m

**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	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	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)

# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.04 AHD  
**EASTING:** 338392.47  
**NORTHING:** 6250837.21  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH117  
**PROJECT No:** 84944.01  
**DATE:** 13/4/2017  
**SHEET** 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
16.0	0.2	TOPSOIL - grey and dark brown, silty sand filling (topsoil), traces of rootlets		A/E	0.1 0.15					
		FILLING - dark brown, medium sand filling		A/E	0.45 0.5					
15.0	1			A/E	0.95 1.0					
14.0	2			A/E	1.95 2.0					
13.0	2.5	FILLING - pale grey and dark brown, medium sand filling		A/E	2.95 3.0					
12.0	3.2	SAND - pale grey, brown and brown, medium sand (possibly filling)		A/E						
11.0	4.0	Bore discontinued at 4.0m - target depth reached								
10.0	5									
9.0	6									
8.0	7									
7.0	8									
6.0	9									

**RIG:** Scout 2

**DRILLER:** JS

**LOGGED:** AT

**CASING:** Uncased

**TYPE OF BORING:** Auger to 4.0m

**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	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	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)

# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.14 AHD  
**EASTING:** 338382.59  
**NORTHING:** 6250811.43  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH118  
**PROJECT No:** 84944.01  
**DATE:** 13/4/2017  
**SHEET** 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
16	0.2	TOPSOIL - grey-brown, medium silty sand (topsoil), traces of rootlets, organic odour		A/E	0.1 0.15					
		FILLING - dark brown medium sand filling, traces of silt		A/E	0.45 0.5					
	0.7	SAND - pale brown and yellow, medium sand, moist		A/E	0.95 1.0				1	
1										
1.5										
1.8		SAND - pale brown and brown, medium sand, moist		A/E	1.95 2.0				2	
2										
2.5		Bore discontinued at 2.5m - target depth reached								
3									3	
3.5										
4									4	
4.5										
5									5	
5.5										
6									6	
6.5										
7									7	
7.5										
8									8	
8.5										
9									9	
9.5										

**RIG:** DT100

**DRILLER:** SS

**LOGGED:** AT

**CASING:** Uncased

**TYPE OF BORING:** Auger to 2.5m

**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	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	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)



# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.38 AHD  
**EASTING:** 338353.07  
**NORTHING:** 6250757.73  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH119  
**PROJECT No:** 84944.01  
**DATE:** 10/4/2017  
**SHEET** 1 OF 1

[illegible]

**RIG:** DT100

**DRILLER: SS**

**LOGGED: RW**

**CASING:** Uncased

**TYPE OF BORING:** Auger to 2.0m

**WATER OBSERVATIONS:** No free groundwater observed

REMARKS:

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




# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.70 AHD  
**EASTING:** 338333.04  
**NORTHING:** 6250703.65  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH120  
**PROJECT No:** 84944.01  
**DATE:** 11/4/2017  
**SHEET** 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
	0.2	TOPSOIL - dark brown, fine to medium silty sand topsoil, dry to moist		A	0.1					
		SAND - brown-yellow, fine to medium sand, dry to moist (possibly filling)		A	0.5					
	0.7									
	1	SAND - dark brown and yellow-brown, fine to medium sand, iron indurated, dry to moist		A	1.0					
				E	1.5					
	2	2.0		A/E	2.0					
		Bore discontinued at 2.0m - target depth reached								
	3									
	4									
	5									
	6									
	7									
	8									
	9									

**RIG:** Scout 2

**DRILLER:** JS

**LOGGED:** RW

**CASING:** Uncased

**TYPE OF BORING:** Auger to 2.0m

**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	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	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)

# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.11 AHD  
**EASTING:** 338357.75  
**NORTHING:** 6250821.77  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH121  
**PROJECT No:** 84944.01  
**DATE:** 12/4/2017  
**SHEET** 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
16.11	0.2	TOPSOIL - dark brown, fine to medium silty sand topsoil, dry to moist		A/E	0.1					
		FILLING - yellow-brown fine to medium sand filling, dry to moist		A/E	0.5					
15.11	0.75	SAND - yellow-brown and grey-brown mottled dark brown, fine to medium sand, dry to moist (possibly filling)		A/E	1.0					
14.11	2.2	SAND - yellow-brown, fine to medium sand, dry to moist		A/E	2.0					
13.11	3.0	Bore discontinued at 3.0m - target depth reached		A/E	3.0					

**RIG:** DT100

**DRILLER:** SS

**LOGGED:** RW

**CASING:** Uncased

**TYPE OF BORING:** Auger to 3.0m

**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	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)

# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.22 AHD  
**EASTING:** 338349.17  
**NORTHING:** 6250799.56  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH122  
**PROJECT No:** 84944.01  
**DATE:** 11/4/2017  
**SHEET 1 OF 1**

[illegible]

**RIG:** DT100

**DRILLER: SS**

**LOGGED: RW**

**CASING:** Uncased

**TYPE OF BORING:** Auger to 2.0m

**WATER OBSERVATIONS:** No free groundwater observed

REMARKS:

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







# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.31 AHD  
**EASTING:** 338341.92  
**NORTHING:** 6250774.57  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH123  
**PROJECT No:** 84944.01  
**DATE:** 11/4/2017  
**SHEET** 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
16.31	0.2	TOPSOIL - dark brown, fine to medium silty sand topsoil, dry to moist		A/E	0.1					
		SAND - grey-brown, fine to medium sand, dry to moist (possibly filling)		A/E	0.5					
	0.7	SAND - dark brown, fine to medium sand, iron indurated, dry to moist		A/E	1.0					
	1									
	1.5	SAND - yellow-brown, fine to medium sand, dry to moist								
	2	Bore discontinued at 2.0m - target depth reached		A/E	2.0					
	2									
	3									
	4									
	5									
	6									
	7									
	8									
	9									

**RIG:** DT100

**DRILLER:** SS

**LOGGED:** RW

**CASING:** Uncased

**TYPE OF BORING:** Auger to 2.0m

**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	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	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)



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# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.51 AHD  
**EASTING:** 338327.48  
**NORTHING:** 6250748.48  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH124  
**PROJECT No:** 84944.01  
**DATE:** 10/4/2017  
**SHEET** 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
	0.3	TOPSOIL - dark brown, fine to medium silty sand topsoil, dry to moist		A	0.1					
	0.75	SAND - grey-brown, fine to medium sand, dry to moist (possible filling)		A/E	0.5					
	1	SAND - grey-brown mottled yellow-brown, fine to medium sand with occasional dark brown pockets of iron indurated sand, dry to moist		A	1.0					
	2.0	Bore discontinued at 2.0m - target depth reached		A/E	2.0					
	3									
	4									
	5									
	6									
	7									
	8									
	9									

**RIG:** DT100

**DRILLER:** SS

**LOGGED:** RW

**CASING:** Uncased

**TYPE OF BORING:** Auger to 2.0m

**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	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)

# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.50 AHD  
**EASTING:** 338319.11  
**NORTHING:** 6250727.97  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH125  
**PROJECT No:** 84944.01  
**DATE:** 10/4/2017  
**SHEET 1 OF 1**

[illegible]

**RIG:** DT100

**DRILLER: SS**

**LOGGED: RW**

**CASING:** Uncased

**TYPE OF BORING:** Auger to 2.0m

**WATER OBSERVATIONS:** No free groundwater observed

REMARKS:

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





# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.10 AHD  
**EASTING:** 338357.72  
**NORTHING:** 6250849.98  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH126  
**PROJECT No:** 84944.01  
**DATE:** 12/4/2017  
**SHEET** 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
16.10	0.3	TOPSOIL - dark brown, fine to medium silty sand topsoil, trace gravel, dry to moist		A/E	0.1					
		FILLING - yellow brown, fine to medium sand filling, dry to moist		A/E	0.5					
15.0	1	1.3m: as above but grey-brown		A/E	1.0					
14.0	2	2.4m: as above but becoming grey-brown and dark brown		A/E	2.0					
13.0	3			A/E	3.0					
12.0	3.4	SAND - yellow-brown, fine to medium sand, moist								
11.0	4	Bore discontinued at 4.0m - target depth reached		A	4.0					
10.0	5									
9.0	6									
8.0	7									
7.0	8									
6.0	9									

**RIG:** DT100

**DRILLER:** SS

**LOGGED:** RW

**CASING:** Uncased

**TYPE OF BORING:** Auger to 4.0m

**WATER OBSERVATIONS:** No free groundwater observed

**REMARKS:**

## SAMPLING & IN SITU TESTING LEGEND




A	Auger sample	G	Gas sample	PLD	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	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)

# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.07 AHD  
**EASTING:** 338330.67  
**NORTHING:** 6250807.63  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH127  
**PROJECT No:** 84944.01  
**DATE:** 11/4/2017  
**SHEET 1 OF 1**

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
16	0.3	TOPSOIL - dark brown, fine to medium silty sand topsoil, dry to moist		A/E	0.1					
		SAND - dark brown mottled yellow-brown, fine to medium sand with iron indurated pockets, dry to moist (possibly filling)		A/E	0.5					
15	1.2	SAND - yellow-brown, fine to medium sand, moist		A/E	1.0					
14	2.0	Bore discontinued at 2.0m - target depth reached		A/E	2.0					

**RIG:** DT100

**DRILLER: SS**

**LOGGED: RW**

**CASING:** Uncased

**TYPE OF BORING:** Auger to 2.0m

**WATER OBSERVATIONS:** No free groundwater observed

REMARKS:

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







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# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 15.95 AHD  
**EASTING:** 338327.14  
**NORTHING:** 6250830.2  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH128  
**PROJECT No:** 84944.01  
**DATE:** 12/4/2017  
**SHEET 1 OF 1**

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
	0.3	TOPSOIL - dark brown, fine to medium silty sand topsoil, moist		A/E	0.1					
		FILLING - yellow-brown mottled dark brown, fine to medium sand filling, dry to moist		A/E	0.5					
	1.4			A/E	1.0					
	2.2	SAND - mottled yellow-brown, dark brown and grey-brown, fine to medium sand, dry to moist (possibly filling)		A/E	2.0					
	3.0	SAND - yellow-brown, fine to medium grained sand, dry to moist		A/E	3.0					
		Bore discontinued at 3.0m - target depth reached								

**RIG:** DT100

**DRILLER: SS**

**LOGGED: RW**

**CASING:** Uncased

**TYPE OF BORING:** Auger to 3.0m

**WATER OBSERVATIONS:** No free groundwater observed

REMARKS:

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



# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.35 AHD  
**EASTING:** 338293.77  
**NORTHING:** 6250744.3  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH129  
**PROJECT No:** 84944.01  
**DATE:** 10/4/2017  
**SHEET 1 OF 1**

[illegible]

**RIG:** DT100

**DRILLER: SS**

**LOGGED: RW**

**CASING:** Uncased

**TYPE OF BORING:** Auger to 4.0m

**WATER OBSERVATIONS:** No free groundwater observed

REMARKS:

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



# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Cranbrook School ECI  
**LOCATION:** New South Head Road, Bellevue Hill

**SURFACE LEVEL:** 16.44 AHD  
**EASTING:** 338282.32  
**NORTHING:** 6250716.51  
**DIP/AZIMUTH:** 90°/--

**BORE No:** BH130  
**PROJECT No:** 84944.01  
**DATE:** 10/4/2017  
**SHEET** 1 OF 1

[illegible]

**RIG:** DT100

**DRILLER: SS**

**LOGGED: RW**

**CASING:** Uncased

**TYPE OF BORING:** Auger to 2.0m

**WATER OBSERVATIONS:** No free groundwater observed

REMARKS:

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



# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Stage 1 Development  
**LOCATION:** Victoria Road, Bellevue Hill

**SURFACE LEVEL:** 16.10 AHD  
**EASTING:**  
**NORTHING:**  
**DIP/AZIMUTH:** 90°/--

**BORE No:** 2  
**PROJECT No:** 84944  
**DATE:** 7/7/2015  
**SHEET** 1 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering						Graphic Log	Rock Strength					Water	Fracture Spacing (m)				Discontinuities		Sampling & In Situ Testing					
			EW	HW	MW	SW	FS	FR		Ex Low	Very Low	Low	Medium	High		Very High	Ex High	0.01	0.05	0.10	0.50	1.00	B - Bedding S - Shear	J - Joint F - Fault	Type	Core Rec. %	RQD %
16	0.15	TOPSOIL - dark brown, silty sand topsoil with trace rootlets, damp																									
		FILLING - poorly compacted, dark brown and light grey-brown mottled, silty sand, damp																									
15	1																					E					1,0,1 N = 1
																						S					
14	2																					E					
																						S					0,0,1 N = 1
13	3																					E					
12	4																					E					
																						S					1,1,1 N = 2
11	4.85	SAND - light yellow-brown, medium grained sand, damp																				E					
10	6																										
9	7																										
8	8																										
7	9																										

**RIG:** Bobcat **DRILLER:** SY **LOGGED:** MP/SI **CASING:** HQ to 9.5m  
**TYPE OF BORING:** Solid flight auger to 9.5m; Rotary to 11.25m; NMLC-Coring to 14.3m  
**WATER OBSERVATIONS:** No free groundwater observed whilst augering  
**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	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)

# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Stage 1 Development  
**LOCATION:** Victoria Road, Bellevue Hill

**SURFACE LEVEL:** 16.10 AHD  
**EASTING:**  
**NORTHING:**  
**DIP/AZIMUTH:** 90°/-

**BORE No:** 2  
**PROJECT No:** 84944  
**DATE:** 7/7/2015  
**SHEET** 2 OF 2

RL	Depth (m)	Description of Strata	Degree of Weathering				Graphic Log	Rock Strength					Water	Fracture Spacing (m)				Discontinuities		Sampling & In Situ Testing																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
			EW	HW	MW	SW		FS	FR	Ex Low	Very Low	Low		Medium	High	Very High	Ex High	0.01	0.05	0.10	0.50	1.00	B - Bedding S - Shear	J - Joint F - Fault	Type	Core Rec. %	RQD %	Test Results & Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
6		SAND - light yellow-brown, medium grained sand, damp <i>(continued)</i>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

**RIG:** Bobcat **DRILLER:** SY **LOGGED:** MP/SI **CASING:** HQ to 9.5m  
**TYPE OF BORING:** Solid flight auger to 9.5m; Rotary to 11.25m; NMLC-Coring to 14.3m  
**WATER OBSERVATIONS:** No free groundwater observed whilst augering  
**REMARKS:**

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



# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Stage 1 Development  
**LOCATION:** Victoria Road, Bellevue Hill

**SURFACE LEVEL:** 16.35 AHD  
**EASTING:**  
**NORTHING:**  
**DIP/AZIMUTH:** 90°/--

**BORE No:** 4  
**PROJECT No:** 84944  
**DATE:** 3/7/2015  
**SHEET** 1 OF 3

RL	Depth (m)	Description of Strata	Degree of Weathering					Graphic Log	Rock Strength					Water	Fracture Spacing (m)				Discontinuities		Sampling & In Situ Testing						
			EW	HW	MW	SW	FS		FR	Ex Low	Very Low	Low	Medium		High	Very High	Ex High	0.01	0.05	0.10	0.50	1.00	B - Bedding S - Shear	J - Joint F - Fault	Type	Core Rec. %	RQD %
16	0.6	TOPSOIL - dark brown, silty sand topsoil with trace rootlets, damp																									
1		FILLING - dark brown and grey-brown, silty sand filling, damp																				E					2,2,3 N = 5
15																					S						
2		- becoming slightly silty and yellow-brown mottled below 2.0m																			E						
14																											
3																					S						3,4,4 N = 8
13																					E						
4		4.0-4.5m: trace organic material																				E					
12	4.5	SILTY SAND - brown and brown-grey, fine to medium grained sand, damp																			S						1,2,3 N = 5
5																											
11																											
6																											
10																											
7	7.0	SAND - yellow-brown, medium grained sand, damp																									
9																											
8																											
8																											
9																											
7																											

**RIG:** Bobcat **DRILLER:** SY **LOGGED:** MP/SI **CASING:** HW to 11.5m  
**TYPE OF BORING:** Solid flight auger to 9.5m; Rotary to 18.0m; NMLC-Coring to 21.1m  
**WATER OBSERVATIONS:** No free groundwater observed whilst augering  
**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	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	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)

# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Stage 1 Development  
**LOCATION:** Victoria Road, Bellevue Hill

**SURFACE LEVEL:** 16.35 AHD  
**EASTING:**  
**NORTHING:**  
**DIP/AZIMUTH:** 90°/--

**BORE No: 4**  
**PROJECT No: 84944**  
**DATE: 3/7/2015**  
**SHEET 2 OF 3**

[illegible]

**RIG:** Bobcat

DRILLER: SY

**LOGGED: MP/SI**

**CASING:** HW to 11.5m

**TYPE OF BORING:** Solid flight auger to 9.5m: Rotary to 18.0m: NMLC-Coring to 21.1m

**WATER OBSERVATIONS:** No free groundwater observed whilst augering

REMARKS:

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	G	Gas sample
B	Bulk sample	P	Piston sample
BLK	Block sample	U	Tube sample (x mm dia.)
C	Core sample	W	Water sample
D	Disturbed sample	W	Water seep
E	Environmental sample	W	Water level
		PID	Photo ionisation detector (ppm)
		PL(A)	Point load axial test (s(50) (MPa)
		PL(D)	Point load diametral test (s(50) (MPa)
		pp	Pocket penetrometer (kPa)
		S	Standard penetration test
		V	Shear vane (kPa)



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# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Stage 1 Development  
**LOCATION:** Victoria Road, Bellevue Hill

**SURFACE LEVEL:** 16.35 AHD  
**EASTING:**  
**NORTHING:**  
**DIP/AZIMUTH:** 90°/--

**BORE No:** 4  
**PROJECT No:** 84944  
**DATE:** 3/7/2015  
**SHEET** 3 OF 3

RL	Depth (m)	Description of Strata	Degree of Weathering						Graphic Log	Rock Strength						Water	Fracture Spacing (m)	Discontinuities		Sampling & In Situ Testing																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
			EW	HW	MW	SW	FS	FR		Ex Low	Very Low	Low	Medium	High	Very High			Ex High	B - Bedding S - Shear	J - Joint F - Fault	Type	Core Rec. %	RQD %	Test Results & Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
	21.1	SANDSTONE - low and medium strength, highly to moderately then slightly weathered, slightly fractured, red-brown then light brown, medium grained sandstone with some very low strength bands <i>(continued)</i>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					

**RIG:** Bobcat **DRILLER:** SY **LOGGED:** MP/SI **CASING:** HW to 11.5m  
**TYPE OF BORING:** Solid flight auger to 9.5m; Rotary to 18.0m; NMLC-Coring to 21.1m  
**WATER OBSERVATIONS:** No free groundwater observed whilst augering  
**REMARKS:**

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

# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Stage 1 Development  
**LOCATION:** Victoria Road, Bellevue Hill

**SURFACE LEVEL:** 32.4 AHD  
**EASTING:**  
**NORTHING:**  
**DIP/AZIMUTH:** 90°/--

**BORE No:** 10  
**PROJECT No:** 84944  
**DATE:** 6/7/2015  
**SHEET** 1 OF 3

RL	Depth (m)	Description of Strata	Degree of Weathering					Graphic Log	Rock Strength					Water	Fracture Spacing (m)				Discontinuities		Sampling & In Situ Testing			
			EW	HW	MW	SW	FS	FR	Ex Low	Very Low	Low	Medium	High	Very High	Ex High	Type	Core Rec. %	RQD %			Test Results & Comments			
	0.05	CONCRETE SLAB																						
	0.55	FILLING - dark brown, silty sand, medium to coarse grained sand, damp																						
	1	FILLING - light grey, medium grained sand with trace of silt, damp																		E				3,3,3 N = 6
	1.95	SAND - yellow-brown, medium grained sand with a trace of silt, damp																		S				6,8,11* refusal
		- loose																						
	3.5	- medium dense below about 3.5m																						
	4																			S				7,9,12 N = 21
	5																							
	6																			S				9,12,14 N = 26
	7																							
	8																			S				8,13,16 N = 29
	8.0	- dense below about 8.0m																						
	9																			S				13,20,20/100mm refusal
	10.0																							

**RIG:** Bobcat **DRILLER:** SY **LOGGED:** MP/SI **CASING:** HW to 8.5m; HQ to 17.5m  
**TYPE OF BORING:** Solid flight auger to 8.5m; Rotary to 20.3m; NMLC-Coring to 22.18m  
**WATER OBSERVATIONS:** No free groundwater observed whilst augering  
**REMARKS:** \*SPT pushed 0.5m in collapsed sand prior to SPT. Numbers higher than realistic

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

# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Stage 1 Development  
**LOCATION:** Victoria Road, Bellevue Hill

**SURFACE LEVEL:** 32.4 AHD  
**EASTING:**  
**NORTHING:**  
**DIP/AZIMUTH:** 90°/--

**BORE No:** 10  
**PROJECT No:** 84944  
**DATE:** 6/7/2015  
**SHEET** 2 OF 3

RL	Depth (m)	Description of Strata	Degree of Weathering					Graphic Log	Rock Strength					Water	Fracture Spacing (m)				Discontinuities		Sampling & In Situ Testing							
			EW	HW	MW	SW	FS		FR	Ex Low	Very Low	Low	Medium		High	Very High	Ex High	0.01	0.05	0.10	0.50	1.00	B - Bedding S - Shear	J - Joint F - Fault	Type	Core Rec. %	RQD %	Test Results & Comments
22		SAND - yellow-brown, medium grained sand with a trace of silt, damp																									12,26/150mm refusal	
11																												
21																												
12																												
20																												
13																												
19																												
14																												
18																												
15																												
17																												
16																												
16																												
17																												
15																												
18																												
14																												
19																												
13																												
19.8																												

Note: Unless otherwise stated, rock is fractured along rough planar bedding dipping 0° - 10°

**RIG:** Bobcat

**DRILLER:** SY

**LOGGED:** MP/SI

**CASING:** HW to 8.5m; HQ to 17.5m

**TYPE OF BORING:** Solid flight auger to 8.5m; Rotary to 20.3m; NMLC-Coring to 22.18m

**WATER OBSERVATIONS:** No free groundwater observed whilst augering

**REMARKS:** \*SPT pushed 0.5m in collapsed sand prior to SPT. Numbers higher than realistic

## 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	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	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)



**Douglas Partners**  
 Geotechnics | Environment | Groundwater

# BOREHOLE LOG

**CLIENT:** Cranbrook School  
**PROJECT:** Stage 1 Development  
**LOCATION:** Victoria Road, Bellevue Hill

**SURFACE LEVEL:** 32.4 AHD  
**EASTING:**  
**NORTHING:**  
**DIP/AZIMUTH:** 90°/--

**BORE No:** 10  
**PROJECT No:** 84944  
**DATE:** 6/7/2015  
**SHEET** 3 OF 3

RL	Depth (m)	Description of Strata	Degree of Weathering					Graphic Log	Rock Strength					Water	Fracture Spacing (m)				Discontinuities		Sampling & In Situ Testing																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
			EW	HW	MW	SW	FS		FR	Ex Low	Very Low	Low	Medium		High	Very High	Ex High	0.01	0.05	0.10	0.50	1.00	B - Bedding S - Shear	J - Joint F - Fault	Type	Core Rec. %	RQD %	Test Results & Comments																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
12	20.3	SILTY CLAY - light grey and red-brown, silty clay with trace ironstone bands (continued)							1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										</

**RIG:** Bobcat

**DRILLER:** SY

**LOGGED:** MP/SI

**CASING:** HW to 8.5m; HQ to 17.5m

**TYPE OF BORING:** Solid flight auger to 8.5m; Rotary to 20.3m; NMLC-Coring to 22.18m

**WATER OBSERVATIONS:** No free groundwater observed whilst augering

**REMARKS:** \*SPT pushed 0.5m in collapsed sand prior to SPT. Numbers higher than realistic

## 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	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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## Appendix E

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### Laboratory Test Results



**Table E1: Contaminant Concentrations in Filling**

Sample/ Depth (m)	B	T	E	X	F1	F2	+PAH	B.TEQ	+OCP	+PCB	Phenol	Asbestos	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	pH	EC
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	(Y/N)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	units	dS/m
<b>Filling (2015)</b>																						
BH2/1.0	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	41	<0.4	3	5	3	<0.1	<1	36	6.3	0.021
BH2/2.0	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	2	1	3	<0.1	<1	3	6.5	0.013
BH2/3.0	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	1	<1	1	<0.1	<1	1	6.5	0.013
BH2/4.0	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	2	<1	1	<0.1	<1	<1	5.8	0.014
BH4/1.0	<0.2	<0.5	<1	<3	<25	<50	5.8	<0.5	NIL	NIL	<5	N	<4	<0.4	2	2	5	<0.1	<1	3	6.3	0.014
BH4/2.0	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	1	1	9	<0.1	<1	3	6.1	0.012
BH4/3.0	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	1	<1	4	<0.1	<1	2	6.0	0.011
BH4/4.0	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	2	1	14	<0.1	<1	4	6.2	0.014
BH10/1.0	<0.2	<0.5	<1	<3	<25	<50	29	2.3	NIL	NIL	<5	N	<4	<0.4	2	22	10	<0.1	1	10	9.9	0.087
<b>Filling (2017)</b>																						
BH101/0.5	<0.2	<0.5	<1	<3	<25	<50	3.0	<0.5	NIL	NIL	<5	N	6	<0.4	2	18	22	<0.1	1	12	6.4	0.022
BH102/0.5	<0.2	<0.5	<1	<3	<25	<50	1.2	<0.5	NIL	NIL	<5	N	11	<0.4	7	18	28	0.3	3	24	6.2	0.027
BH103/0.1	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	42	15	14	<0.1	21	24	5.3	0.200
BH111/0.45-0.5	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	<1	<1	1	<0.1	<1	1	6.3	0.012
BH113/1.0-1.05	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	41	<0.4	1	2	2	<0.1	<1	4	6.1	0.012
BH115/0.1	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	14	<0.4	5	5	6	<0.1	3	16	6.1	0.032
BH117/1.95-2.0	<0.2	<0.5	<1	<3	<25	<50	0.2	<0.5	NIL	NIL	<5	N	<4	<0.4	1	3	7	<0.1	<1	6	6.1	0.014
BH118/0.1-0.15	<0.2	<0.5	<1	<3	<25	<50	0.78	<0.5	NIL	NIL	<5	N	5	<0.4	4	5	11	0.2	2	9	5.8	0.027
BH124/0.1	<0.2	<0.5	<1	<3	<25	<50	0.59	<0.5	NIL	NIL	<5	N	5	<0.4	4	5	12	0.2	2	13	6.2	0.028
BH126/2.0	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	<1	1	2	<0.1	<1	3	6.4	0.008
BH128/1.0	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	1	2	1	<0.1	<1	5	6.2	0.011
BH130/0.1	<0.2	<0.5	<1	<3	<25	<50	2.3	<0.5	NIL	NIL	<5	N	19	0.5	9	19	50	<0.1	4	42	5.7	0.025
<b>Statistical Analysis of Contaminant Concentrations in Filling (mg/kg)</b>																						
Maximum	NA	NA	NA	NA	NA	NA	29	2.3	NA	NA	NA	NA	41	0.5	42	22	50	0.3	21	42	9.9	0.200
Minimum	NA	NA	NA	NA	NA	NA	NIL	<0.5	NA	NA	NA	NA	<4	<0.4	<1	<1	1	<0.1	<1	<1	5.3	0.008
Average	NA	NA	NA	NA	NA	NA	2.0	NA	NA	NA	NA	NA	6.8	NA	4.4	6.0	9.8	0.03	1.8	10.5	6.3	0.029
Std. Deviation	NA	NA	NA	NA	NA	NA	6.3	NA	NA	NA	NA	NA	12.6	NA	8.9	7.4	11.7	0.11	4.6	11.8	0.9	0.043
95% UCL	NA	NA	NA	NA	NA	NA	8.1	NA	NA	NA	NA	NA	18.7	NA	12.9	13.0	15.7	0.20	6.1	21.7	6.6	0.070

Notes: B = Benzene; T = Toluene; E = Ethylbenzene; X = Xylene; Napth. = Naphthalene; F1 = (C<sub>6</sub> – C<sub>10</sub>) – BTEX; F2 = (C<sub>11</sub> – C<sub>16</sub>) – Naphthalene; +PAH = Positive polycyclic aromatic hydrocarbons; B.TEQ = Carcinogenic PAHs (as B(a)P TEQ); OCP = Organochlorine pesticides; OPP = Organophosphorus pesticides; PCB = Polychlorinated biphenyls; CEC = cation exchange capacity; ACM = asbestos containing material; As = Arsenic; Cd = Cadmium; Cr = Chromium; Cu = Copper; Pb = Lead; Hg = Mercury; Ni = Nickel; Zn = Zinc;

**Table E2: Contaminant Concentrations in Natural Soil**

Sample/ Depth (m)	B	T	E	X	F1	F2	+PAH	B.TEQ	+OCP	+PCB	Phenol	Asbestos	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	pH	EC
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	(Y/N)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	units	dS/m
<b>Natural Soil (2015)</b>																						
BH10/2.0	<0.2	<0.5	<1	<3	<25	<50	0.1	<0.5	NIL	NIL	<5	NT	<4	<0.4	2	<1	2	<0.1	1	1	7.2	0.036
<b>Natural Soil (2017)</b>																						
BH101/4.0	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	1	2	<1	<0.1	<1	2	6.1	0.008
BH102/2.0	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	1	2	3	<0.1	<1	3	6.0	0.009
BH103/1.0	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	<1	2	<1	<0.1	<1	3	5.7	0.031
BH104/1.0	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	1	<1	2	<0.1	<1	4	5.8	0.011
BH105/1.0	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	1	3	3	<0.1	<1	4	6.5	0.018
BH111/2.9-3.0	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	1	<1	3	<0.1	<1	2	6.1	0.010
BH112/0.5	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	4	4	10	<0.1	2	11	5.6	0.064
BH114/1.0	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	2	1	3	<0.1	<1	4	6.0	0.013
BH116/1.0	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	0.6	<1	1	7	<0.1	<1	3	6.4	0.014
BH119/0.5	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	<1	2	2	<0.1	<1	5	5.8	0.012
BH120/0.5	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	9	<0.4	8	7	16	0.1	3	17	8.0	0.130
BH121/1.0	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	1	2	3	<0.1	<1	7	6.6	0.012
BH122/1.0	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	8	4	6	<0.1	8	7	6.6	0.018
BH123/0.5	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	<1	1	3	<0.1	<1	2	6.4	0.015
BH125/0.5	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	2	7	4	<0.1	2	9	6.1	0.017
BH127/0.5	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	1	2	3	<0.1	1	13	5.9	0.013
BH129/0.5	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	2	2	2	<0.1	1	12	6.0	0.016
BH129/2.0	<0.2	<0.5	<1	<3	<25	<50	NIL	<0.5	NIL	NIL	<5	N	<4	<0.4	2	<1	1	<0.1	<1	1	6.1	0.015
<b>Statistical Analysis of Contaminant Concentrations in Natural Soil (mg/kg)</b>																						
Maximum	NA	NA	NA	NA	NA	NA	0.1	NA	NA	NA	NA	NA	9	0.6	8	7	16	0.1	8	17	8.0	0.130
Minimum	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<4	<0.4	<1	<1	<1	<0.1	<1	1	5.6	0.008
Average	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.9	2.3	3.9	NA	0.9	6.1	6.2	23.7
Std. Deviation	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.4	2.1	3.9	NA	2.0	4.6	0.5	29.4
95% UCL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.4	4.4	7.9	NA	3.0	8.7	6.4	53.9

Notes: B = Benzene; T = Toluene; E = Ethylbenzene; X = Xylene; Naph. = Naphthalene; F1 = (C<sub>6</sub> – C<sub>10</sub>) – BTEX; F2 = (C<sub>11</sub> – C<sub>16</sub>) – Naphthalene; +PAH = Positive polycyclic aromatic hydrocarbons; B.TEQ = Carcinogenic PAHs (as B(a)P TEQ); OCP = Organochlorine pesticides; OPP = Organophosphorus pesticides; PCB = Polychlorinated biphenyls; CEC = cation exchange capacity; ACM = asbestos containing material; As = Arsenic; Cd = Cadmium; Cr = Chromium; Cu = Copper; Pb = Lead; Hg = Mercury; Ni = Nickel; Zn = Zinc;

Table E3: Adopted Comparative Criteria for Soils

Sample/ Depth (m)	B	T	E	X	F1	F2	+PAH	B.TEQ	+OCP	+PCB	Phenol	Asbestos	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	pH	EC
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	(Y/N)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	units	dS/m
Adopted Investigation/Screening Levels (mg/kg)																						
Health-Based <sup>1</sup>							300	3	Various	1	40000		300	90	300	17000	600	80	1200	30000		
Ecological <sup>2</sup>	50	85	70	105	180	120		0.7					100		190	95	1100		30	230		

Notes: B = Benzene; T = Toluene; E = Ethylbenzene; X = Xylene; Napth. = Naphthalene; F1 = (C<sub>6</sub> – C<sub>10</sub>) – BTEX; F2 = (C<sub>11</sub> – C<sub>16</sub>) – Naphthalene; +PAH = Positive polycyclic aromatic hydrocarbons; B.TEQ = Carcinogenic PAHs (as B(a)P TEQ); OCP = Organochlorine pesticides; OPP = Organophosphorus pesticides; PCB = Polychlorinated biphenyls; CEC = cation exchange capacity; ACM = asbestos containing material; As = Arsenic; Cd = Cadmium; Cr = Chromium; Cu = Copper; Pb = Lead; Hg = Mercury; Ni = Nickel; Zn = Zinc;

<sup>1</sup>Based on NEPM HIL C Sites; <sup>2</sup>Based on NEPM ACL and assumed pH = 6.5/CEC = 5%; <sup>1&2</sup>Based on NEPM coarse-grained soils



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Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

## CERTIFICATE OF ANALYSIS

165477

### Client:

**Douglas Partners Pty Ltd**  
96 Hermitage Rd  
West Ryde  
NSW 2114

**Attention:** Peter Oitmaa

### Sample log in details:

Your Reference:	<b>84944.01, Bellevue Hill</b>
No. of samples:	30 soils
Date samples received / completed instructions received	19/04/17 / 19/04/17

### 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:	27/04/17 / 27/04/17
Date of Preliminary Report:	Not Issued

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### Results Approved By:

David Springer  
General Manager



Envirolab Reference: 165477  
Revision No: R 00

vTRH(C6-C10)/BTEXN in Soil Our Reference: Your Reference	UNITS ----- -	165477-1 BH101	165477-2 BH101	165477-3 BH102	165477-4 BH102	165477-5 BH103
Depth	-----	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
TRHC <sub>6</sub> - C <sub>9</sub>	mg/kg	<25	<25	<25	<25	<25
TRHC <sub>6</sub> - C <sub>10</sub>	mg/kg	<25	<25	<25	<25	<25
vTPHC <sub>6</sub> - C <sub>10</sub> 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	98	92	100	93	98

vTRH(C6-C10)/BTEXN in Soil Our Reference: Your Reference	UNITS ----- -	165477-6 BH103	165477-7 BH104	165477-8 BH105	165477-9 BH111	165477-10 BH111
Depth	-----	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
TRHC <sub>6</sub> - C <sub>9</sub>	mg/kg	<25	<25	<25	<25	<25
TRHC <sub>6</sub> - C <sub>10</sub>	mg/kg	<25	<25	<25	<25	<25
vTPHC <sub>6</sub> - C <sub>10</sub> 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	103	94	93	99	97

vTRH(C6-C10)/BTEX in Soil Our Reference: Your Reference	UNITS ----- -	165477-11 BH112	165477-12 BH113	165477-13 BH114	165477-14 BH115	165477-15 BH116
Depth	-----	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
TRHC <sub>6</sub> - C <sub>9</sub>	mg/kg	<25	<25	<25	<25	<25
TRHC <sub>6</sub> - C <sub>10</sub>	mg/kg	<25	<25	<25	<25	<25
vTPHC <sub>6</sub> - C <sub>10</sub> 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	98	101	100	94	100

vTRH(C6-C10)/BTEX in Soil Our Reference: Your Reference	UNITS ----- -	165477-16 BH117	165477-17 BH118	165477-18 BH119	165477-19 BH120	165477-20 BH121
Depth	-----	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
TRHC <sub>6</sub> - C <sub>9</sub>	mg/kg	<25	<25	<25	<25	<25
TRHC <sub>6</sub> - C <sub>10</sub>	mg/kg	<25	<25	<25	<25	<25
vTPHC <sub>6</sub> - C <sub>10</sub> 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	99	97	102	98	86

vTRH(C6-C10)/BTEXN in Soil Our Reference: Your Reference	UNITS ----- -	165477-21 BH122	165477-22 BH123	165477-23 BH124	165477-24 BH125	165477-25 BH126
Depth	-----	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
TRHC <sub>6</sub> - C <sub>9</sub>	mg/kg	<25	<25	<25	<25	<25
TRHC <sub>6</sub> - C <sub>10</sub>	mg/kg	<25	<25	<25	<25	<25
vTPHC <sub>6</sub> - C <sub>10</sub> 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	101	98	100	94	91

vTRH(C6-C10)/BTEXN in Soil Our Reference: Your Reference	UNITS ----- -	165477-26 BH127	165477-27 BH128	165477-28 BH129	165477-29 BH129	165477-30 BH130
Depth	-----	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	21/04/2017	21/04/2017
TRHC <sub>6</sub> - C <sub>9</sub>	mg/kg	<25	<25	<25	<25	<25
TRHC <sub>6</sub> - C <sub>10</sub>	mg/kg	<25	<25	<25	<25	<25
vTPHC <sub>6</sub> - C <sub>10</sub> 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	94	87	96	96	94

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	165477-1	165477-2	165477-3	165477-4	165477-5
Your Reference	-----	BH101	BH101	BH102	BH102	BH103
	-					
Depth	-----	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
TRHC <sub>10</sub> - C <sub>14</sub>	mg/kg	<50	<50	<50	<50	<50
TRHC <sub>15</sub> - C <sub>28</sub>	mg/kg	<100	<100	<100	<100	<100
TRHC <sub>29</sub> - C <sub>36</sub>	mg/kg	<100	<100	<100	<100	<100
TRH>C <sub>10</sub> -C <sub>16</sub>	mg/kg	<50	<50	<50	<50	<50
TRH>C <sub>10</sub> - C <sub>16</sub> less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C <sub>16</sub> -C <sub>34</sub>	mg/kg	<100	<100	<100	<100	<100
TRH>C <sub>34</sub> -C <sub>40</sub>	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	84	84	85	82	87

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	165477-6	165477-7	165477-8	165477-9	165477-10
Your Reference	-----	BH103	BH104	BH105	BH111	BH111
	-					
Depth	-----	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
TRHC <sub>10</sub> - C <sub>14</sub>	mg/kg	<50	<50	<50	<50	<50
TRHC <sub>15</sub> - C <sub>28</sub>	mg/kg	<100	<100	<100	<100	<100
TRHC <sub>29</sub> - C <sub>36</sub>	mg/kg	<100	<100	<100	<100	<100
TRH>C <sub>10</sub> -C <sub>16</sub>	mg/kg	<50	<50	<50	<50	<50
TRH>C <sub>10</sub> - C <sub>16</sub> less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C <sub>16</sub> -C <sub>34</sub>	mg/kg	<100	<100	<100	<100	<100
TRH>C <sub>34</sub> -C <sub>40</sub>	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	83	83	84	83	82



svTRH (C10-C40) in Soil						
Our Reference:	UNITS	165477-11	165477-12	165477-13	165477-14	165477-15
Your Reference	-----	BH112	BH113	BH114	BH115	BH116
	-					
Depth	-----	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	21/04/2017
TRHC <sub>10</sub> - C <sub>14</sub>	mg/kg	<50	<50	<50	<50	<50
TRHC <sub>15</sub> - C <sub>28</sub>	mg/kg	<100	<100	<100	<100	<100
TRHC <sub>29</sub> - C <sub>36</sub>	mg/kg	<100	<100	<100	<100	<100
TRH>C <sub>10</sub> -C <sub>16</sub>	mg/kg	<50	<50	<50	<50	<50
TRH>C <sub>10</sub> - C <sub>16</sub> less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C <sub>16</sub> -C <sub>34</sub>	mg/kg	<100	<100	<100	<100	<100
TRH>C <sub>34</sub> -C <sub>40</sub>	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	82	84	85	84	81

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	165477-16	165477-17	165477-18	165477-19	165477-20
Your Reference	-----	BH117	BH118	BH119	BH120	BH121
	-					
Depth	-----	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
TRHC <sub>10</sub> - C <sub>14</sub>	mg/kg	<50	<50	<50	<50	<50
TRHC <sub>15</sub> - C <sub>28</sub>	mg/kg	<100	<100	<100	<100	<100
TRHC <sub>29</sub> - C <sub>36</sub>	mg/kg	<100	<100	<100	<100	<100
TRH>C <sub>10</sub> -C <sub>16</sub>	mg/kg	<50	<50	<50	<50	<50
TRH>C <sub>10</sub> - C <sub>16</sub> less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C <sub>16</sub> -C <sub>34</sub>	mg/kg	<100	<100	<100	<100	<100
TRH>C <sub>34</sub> -C <sub>40</sub>	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	83	81	83	81	83

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	165477-21	165477-22	165477-23	165477-24	165477-25
Your Reference	-----	BH122	BH123	BH124	BH125	BH126
	-					
Depth	-----	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
TRHC <sub>10</sub> - C <sub>14</sub>	mg/kg	<50	<50	<50	<50	<50
TRHC <sub>15</sub> - C <sub>28</sub>	mg/kg	<100	<100	<100	<100	<100
TRHC <sub>29</sub> - C <sub>36</sub>	mg/kg	<100	<100	<100	<100	<100
TRH>C <sub>10</sub> -C <sub>16</sub>	mg/kg	<50	<50	<50	<50	<50
TRH>C <sub>10</sub> - C <sub>16</sub> less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C <sub>16</sub> -C <sub>34</sub>	mg/kg	<100	<100	<100	<100	<100
TRH>C <sub>34</sub> -C <sub>40</sub>	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	86	82	83	82	83

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	165477-26	165477-27	165477-28	165477-29	165477-30
Your Reference	-----	BH127	BH128	BH129	BH129	BH130
	-					
Depth	-----	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
TRHC <sub>10</sub> - C <sub>14</sub>	mg/kg	<50	<50	<50	<50	<50
TRHC <sub>15</sub> - C <sub>28</sub>	mg/kg	<100	<100	<100	<100	<100
TRHC <sub>29</sub> - C <sub>36</sub>	mg/kg	<100	<100	<100	<100	<100
TRH>C <sub>10</sub> -C <sub>16</sub>	mg/kg	<50	<50	<50	<50	<50
TRH>C <sub>10</sub> - C <sub>16</sub> less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C <sub>16</sub> -C <sub>34</sub>	mg/kg	<100	<100	<100	<100	<100
TRH>C <sub>34</sub> -C <sub>40</sub>	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	84	84	86	85	86

PAHs in Soil Our Reference: Your Reference	UNITS ----- -	165477-1 BH101	165477-2 BH101	165477-3 BH102	165477-4 BH102	165477-5 BH103
Depth	-----	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
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	0.6	<0.1	0.2	<0.1	<0.1
Pyrene	mg/kg	0.5	<0.1	0.3	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.3	<0.1	0.2	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.5	<0.2	0.3	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.3	<0.05	0.2	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.3	<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 +ve PAH's	mg/kg	3.0	<0.05	1.2	<0.05	<0.05
Surrogate p-Terphenyl-d14	%	97	90	94	93	99

PAHs in Soil Our Reference: Your Reference	UNITS ----- -	165477-6 BH103	165477-7 BH104	165477-8 BH105	165477-9 BH111	165477-10 BH111
Depth	-----	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
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
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 +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Surrogate p-Terphenyl-d14	%	95	92	92	95	94

PAHs in Soil Our Reference: Your Reference	UNITS ----- -	165477-11 BH112	165477-12 BH113	165477-13 BH114	165477-14 BH115	165477-15 BH116
Depth	-----	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
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
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 +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Surrogate p-Terphenyl-d14	%	98	93	95	93	92

PAHs in Soil Our Reference: Your Reference	UNITS ----- -	165477-16 BH117	165477-17 BH118	165477-18 BH119	165477-19 BH120	165477-20 BH121
Depth	-----	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
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	0.2	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	0.2	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	0.2	<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	0.06	<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
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 +ve PAH's	mg/kg	0.2	0.78	<0.05	<0.05	<0.05
Surrogate p-Terphenyl-d14	%	94	94	95	97	91

PAHs in Soil Our Reference: Your Reference	UNITS ----- -	165477-21 BH122	165477-22 BH123	165477-23 BH124	165477-24 BH125	165477-25 BH126
Depth	-----	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
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	0.2	<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 +ve PAH's	mg/kg	<0.05	<0.05	0.59	<0.05	<0.05
Surrogate p-Terphenyl-d14	%	93	91	98	93	91

PAHs in Soil Our Reference: Your Reference	UNITS ----- -	165477-26 BH127	165477-27 BH128	165477-28 BH129	165477-29 BH129	165477-30 BH130
Depth	-----	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
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	0.4
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.4
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	0.3
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	0.5
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
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	0.2
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 +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	2.3
Surrogate p-Terphenyl-d14	%	97	93	97	93	93



Organochlorine Pesticides in soil	UNITS	165477-1	165477-2	165477-3	165477-4	165477-5
Our Reference:	-----	BH101	BH101	BH102	BH102	BH103
Your Reference	-					
Depth	-----	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
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
HeptachlorEpoxide	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	%	99	102	100	99	99

Organochlorine Pesticides in soil	UNITS	165477-6	165477-7	165477-8	165477-9	165477-10
Our Reference:	-----	BH103	BH104	BH105	BH111	BH111
Your Reference	-					
Depth	-----	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
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
HeptachlorEpoxide	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	%	98	102	96	98	99

Organochlorine Pesticides in soil	UNITS	165477-11 BH112	165477-12 BH113	165477-13 BH114	165477-14 BH115	165477-15 BH116
Our Reference:	-----					
Your Reference	-					
Depth	-----	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
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
HeptachlorEpoxide	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	%	98	97	98	98	97

Organochlorine Pesticides in soil	UNITS	165477-16 BH117	165477-17 BH118	165477-18 BH119	165477-19 BH120	165477-20 BH121
Our Reference:	-----					
Your Reference	-					
Depth	-----	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
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
HeptachlorEpoxide	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	%	100	94	100	96	95

Organochlorine Pesticides in soil	UNITS	165477-21 BH122	165477-22 BH123	165477-23 BH124	165477-24 BH125	165477-25 BH126
Our Reference:	-----					
Your Reference	-					
Depth	-----	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
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
HeptachlorEpoxide	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	%	99	103	97	99	99

Organochlorine Pesticides in soil	UNITS	165477-26 BH127	165477-27 BH128	165477-28 BH129	165477-29 BH129	165477-30 BH130
Our Reference:	-----					
Your Reference	-					
Depth	-----	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
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
HeptachlorEpoxide	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	%	100	101	99	100	96

Organophosphorus Pesticides	UNITS	165477-1	165477-2	165477-3	165477-4	165477-5
Our Reference:	-----	BH101	BH101	BH102	BH102	BH103
Your Reference	-					
Depth	-----	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
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
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-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	%	99	102	100	99	99

Organophosphorus Pesticides	UNITS	165477-6	165477-7	165477-8	165477-9	165477-10
Our Reference:	-----	BH103	BH104	BH105	BH111	BH111
Your Reference	-					
Depth	-----	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
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
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-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	%	98	102	96	98	99

Organophosphorus Pesticides	UNITS	165477-11	165477-12	165477-13	165477-14	165477-15
Our Reference:	-----	BH112	BH113	BH114	BH115	BH116
Your Reference	-					
Depth	-----	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
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
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-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	%	98	97	98	98	97

Organophosphorus Pesticides	UNITS	165477-16	165477-17	165477-18	165477-19	165477-20
Our Reference:	-----	BH117	BH118	BH119	BH120	BH121
Your Reference	-					
Depth	-----	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
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
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-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	%	100	94	100	96	95



Organophosphorus Pesticides	UNITS	165477-21	165477-22	165477-23	165477-24	165477-25
Our Reference:	-----	BH122	BH123	BH124	BH125	BH126
Your Reference	-					
Depth	-----	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
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
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-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	%	99	103	97	99	99

Organophosphorus Pesticides	UNITS	165477-26	165477-27	165477-28	165477-29	165477-30
Our Reference:	-----	BH127	BH128	BH129	BH129	BH130
Your Reference	-					
Depth	-----	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
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
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-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	%	100	101	99	100	96

PCBs in Soil Our Reference: Your Reference	UNITS ----- -	165477-1 BH101	165477-2 BH101	165477-3 BH102	165477-4 BH102	165477-5 BH103
Depth	-----	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
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 TCLMX	%	99	102	100	99	99

PCBs in Soil Our Reference: Your Reference	UNITS ----- -	165477-6 BH103	165477-7 BH104	165477-8 BH105	165477-9 BH111	165477-10 BH111
Depth	-----	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
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 TCLMX	%	98	102	96	98	99

PCBs in Soil Our Reference: Your Reference	UNITS ----- -	165477-11 BH112	165477-12 BH113	165477-13 BH114	165477-14 BH115	165477-15 BH116
Depth	-----	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
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 TCLMX	%	98	97	98	98	97

PCBs in Soil Our Reference: Your Reference	UNITS ----- -	165477-16 BH117	165477-17 BH118	165477-18 BH119	165477-19 BH120	165477-20 BH121
Depth	-----	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
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 TCLMX	%	100	94	100	96	95

PCBs in Soil Our Reference: Your Reference	UNITS ----- -	165477-21 BH122	165477-22 BH123	165477-23 BH124	165477-24 BH125	165477-25 BH126
Depth	-----	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
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 TCLMX	%	99	103	97	99	99

PCBs in Soil Our Reference: Your Reference	UNITS ----- -	165477-26 BH127	165477-27 BH128	165477-28 BH129	165477-29 BH129	165477-30 BH130
Depth	-----	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
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 TCLMX	%	100	101	99	100	96

Acid Extractable metals in soil						
Our Reference:	UNITS	165477-1	165477-2	165477-3	165477-4	165477-5
Your Reference	-----	BH101	BH101	BH102	BH102	BH103
	-					
Depth	-----	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Arsenic	mg/kg	6	<4	11	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	2	1	7	1	42
Copper	mg/kg	18	2	18	2	15
Lead	mg/kg	22	<1	28	3	14
Mercury	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Nickel	mg/kg	1	<1	3	<1	21
Zinc	mg/kg	12	2	24	3	24

Acid Extractable metals in soil						
Our Reference:	UNITS	165477-6	165477-7	165477-8	165477-9	165477-10
Your Reference	-----	BH103	BH104	BH105	BH111	BH111
	-					
Depth	-----	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	<1	1	1	<1	1
Copper	mg/kg	2	<1	3	<1	<1
Lead	mg/kg	<1	2	3	1	3
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	<1	<1	<1	<1
Zinc	mg/kg	3	4	4	1	2

Acid Extractable metals in soil						
Our Reference:	UNITS	165477-11	165477-12	165477-13	165477-14	165477-15
Your Reference	-----	BH112	BH113	BH114	BH115	BH116
	-					
Depth	-----	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Arsenic	mg/kg	<4	41	<4	14	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	0.6
Chromium	mg/kg	4	1	2	5	<1
Copper	mg/kg	4	2	1	5	1
Lead	mg/kg	10	2	3	6	7
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	<1	<1	3	<1
Zinc	mg/kg	11	4	4	16	3

Acid Extractable metals in soil						
Our Reference:	UNITS	165477-16	165477-17	165477-18	165477-19	165477-20
Your Reference	-----	BH117	BH118	BH119	BH120	BH121
	-					
Depth	-----	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Arsenic	mg/kg	<4	5	<4	9	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	1	4	<1	8	1
Copper	mg/kg	3	5	2	7	2
Lead	mg/kg	7	11	2	16	3
Mercury	mg/kg	<0.1	0.2	<0.1	0.1	<0.1
Nickel	mg/kg	<1	2	<1	3	<1
Zinc	mg/kg	6	9	5	17	7

Acid Extractable metals in soil Our Reference: Your Reference	UNITS ----- -	165477-21 BH122	165477-22 BH123	165477-23 BH124	165477-24 BH125	165477-25 BH126
Depth	-----	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Arsenic	mg/kg	<4	<4	5	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	8	<1	4	2	<1
Copper	mg/kg	4	1	5	7	1
Lead	mg/kg	6	3	12	4	2
Mercury	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Nickel	mg/kg	8	<1	2	2	<1
Zinc	mg/kg	7	2	13	9	3

Acid Extractable metals in soil Our Reference: Your Reference	UNITS ----- -	165477-26 BH127	165477-27 BH128	165477-28 BH129	165477-29 BH129	165477-30 BH130
Depth	-----	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Arsenic	mg/kg	<4	<4	<4	<4	19
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	0.5
Chromium	mg/kg	1	1	2	2	9
Copper	mg/kg	2	2	2	<1	19
Lead	mg/kg	3	1	2	1	50
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	1	<1	1	<1	4
Zinc	mg/kg	13	5	12	1	42

Acid Extractable metals in soil				
Our Reference:	UNITS	165477-31	165477-32	165477-33
Your Reference	-----	BH101 -	BH112 -	BH122 -
	-	[TRIPLICATE]	[TRIPLICATE]	[TRIPLICATE]
Depth	-----	0.5	0.5	1.0
Date Sampled		12/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017
Arsenic	mg/kg	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	2	2	53
Copper	mg/kg	14	1	5
Lead	mg/kg	11	7	6
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	1	<1	16
Zinc	mg/kg	7	6	8



Misc Soil - Inorg Our Reference: Your Reference	UNITS ----- -	165477-1 BH101	165477-2 BH101	165477-3 BH102	165477-4 BH102	165477-5 BH103
Depth	-----	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg Our Reference: Your Reference	UNITS ----- -	165477-6 BH103	165477-7 BH104	165477-8 BH105	165477-9 BH111	165477-10 BH111
Depth	-----	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg Our Reference: Your Reference	UNITS ----- -	165477-11 BH112	165477-12 BH113	165477-13 BH114	165477-14 BH115	165477-15 BH116
Depth	-----	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg Our Reference: Your Reference	UNITS ----- -	165477-16 BH117	165477-17 BH118	165477-18 BH119	165477-19 BH120	165477-20 BH121
Depth	-----	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg Our Reference: Your Reference	UNITS ----- -	165477-21 BH122	165477-22 BH123	165477-23 BH124	165477-24 BH125	165477-25 BH126
Depth	-----	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg Our Reference: Your Reference	UNITS ----- -	165477-26 BH127	165477-27 BH128	165477-28 BH129	165477-29 BH129	165477-30 BH130
Depth	-----	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Moisture Our Reference: Your Reference	UNITS ----- -	165477-1 BH101	165477-2 BH101	165477-3 BH102	165477-4 BH102	165477-5 BH103
Depth Date Sampled Type of sample	----- ----- -----	0.5 12/04/2017 Soil	4.0 12/04/2017 Soil	0.5 12/04/2017 Soil	2.0 12/04/2017 Soil	0.1 11/04/2017 Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
Moisture	%	9.7	9.7	15	18	20

Moisture Our Reference: Your Reference	UNITS ----- -	165477-6 BH103	165477-7 BH104	165477-8 BH105	165477-9 BH111	165477-10 BH111
Depth Date Sampled Type of sample	----- ----- -----	1.0 11/04/2017 Soil	1.0 12/04/2017 Soil	1.0 10/04/2017 Soil	0.45-0.5 13/04/2017 Soil	2.9-3.0 13/04/2017 Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
Moisture	%	5.5	9.0	17	5.6	5.5

Moisture Our Reference: Your Reference	UNITS ----- -	165477-11 BH112	165477-12 BH113	165477-13 BH114	165477-14 BH115	165477-15 BH116
Depth Date Sampled Type of sample	----- ----- -----	0.5 11/04/2017 Soil	1.0-1.05 13/04/2017 Soil	1.0 11/04/2017 Soil	0.1 11/04/2017 Soil	1.0 11/04/2017 Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
Moisture	%	6.7	4.0	5.1	15	10

Moisture Our Reference: Your Reference	UNITS ----- -	165477-16 BH117	165477-17 BH118	165477-18 BH119	165477-19 BH120	165477-20 BH121
Depth Date Sampled Type of sample	----- ----- -----	1.95-2.0 13/04/2017 Soil	0.1-0.15 13/04/2017 Soil	0.5 10/04/2017 Soil	0.5 11/04/2017 Soil	1.0 12/04/2017 Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
Moisture	%	6.3	15	4.0	9.5	19

Moisture Our Reference: Your Reference	UNITS ----- -	165477-21 BH122	165477-22 BH123	165477-23 BH124	165477-24 BH125	165477-25 BH126
Depth Date Sampled Type of sample	----- - -----	1.0 11/04/2017 Soil	0.5 11/04/2017 Soil	0.1 10/04/2017 Soil	0.5 10/04/2017 Soil	2.0 12/04/2017 Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
Moisture	%	5.0	4.4	9.2	6.3	20

Moisture Our Reference: Your Reference	UNITS ----- -	165477-26 BH127	165477-27 BH128	165477-28 BH129	165477-29 BH129	165477-30 BH130
Depth Date Sampled Type of sample	----- - -----	0.5 11/04/2017 Soil	1.0 12/04/2017 Soil	0.5 10/04/2017 Soil	2.0 10/04/2017 Soil	0.1 10/04/2017 Soil
Date prepared	-	20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Date analysed	-	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017
Moisture	%	4.1	20	6.2	7.0	15

Asbestos ID - soils Our Reference: Your Reference	UNITS ----- -	165477-1 BH101	165477-2 BH101	165477-3 BH102	165477-4 BH102	165477-5 BH103
Depth	-----	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Sample mass tested	g	Approx. 40g	Approx. 30g	Approx. 40g	Approx. 35g	Approx. 40g
Sample Description	-	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown coarse-grained 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: Your Reference	UNITS ----- -	165477-6 BH103	165477-7 BH104	165477-8 BH105	165477-9 BH111	165477-10 BH111
Depth	-----	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Sample mass tested	g	Approx. 35g	Approx. 20g	Approx. 40g	Approx. 30g	Approx. 30g
Sample Description	-	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil
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: Your Reference	UNITS ----- -	165477-11 BH112	165477-12 BH113	165477-13 BH114	165477-14 BH115	165477-15 BH116
Depth	-----	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Sample mass tested	g	Approx. 40g	Approx. 30g	Approx. 30g	Approx. 30g	Approx. 30g
Sample Description	-	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil
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: Your Reference	UNITS ----- -	165477-16 BH117	165477-17 BH118	165477-18 BH119	165477-19 BH120	165477-20 BH121
Depth	-----	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Sample mass tested	g	Approx. 30g	Approx. 30g	Approx. 50g	Approx. 50g	Approx. 40g
Sample Description	-	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil
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: Your Reference	UNITS ----- -	165477-21 BH122	165477-22 BH123	165477-23 BH124	165477-24 BH125	165477-25 BH126
Depth	-----	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Sample mass tested	g	Approx. 30g	Approx. 30g	Approx. 50g	Approx. 40g	Approx. 40g
Sample Description	-	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil
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: Your Reference	UNITS ----- -	165477-26 BH127	165477-27 BH128	165477-28 BH129	165477-29 BH129	165477-30 BH130
Depth	-----	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Sample mass tested	g	Approx. 30g	Approx. 40g	Approx. 40g	Approx. 35g	Approx. 35g
Sample Description	-	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil	Brown sandy soil
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: Your Reference	UNITS ----- -	165477-1 BH101	165477-2 BH101	165477-3 BH102	165477-4 BH102	165477-5 BH103
Depth	-----	0.5	4.0	0.5	2.0	0.1
Date Sampled		12/04/2017	12/04/2017	12/04/2017	12/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
Date analysed	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
pH 1:5 soil:water	pH Units	6.4	6.1	6.2	6.0	5.3
Electrical Conductivity 1:5 soil:water	µS/cm	22	8	27	9	200

Misc Inorg - Soil Our Reference: Your Reference	UNITS ----- -	165477-6 BH103	165477-7 BH104	165477-8 BH105	165477-9 BH111	165477-10 BH111
Depth	-----	1.0	1.0	1.0	0.45-0.5	2.9-3.0
Date Sampled		11/04/2017	12/04/2017	10/04/2017	13/04/2017	13/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
Date analysed	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
pH 1:5 soil:water	pH Units	5.7	5.8	6.5	6.3	6.1
Electrical Conductivity 1:5 soil:water	µS/cm	31	11	18	12	10

Misc Inorg - Soil Our Reference: Your Reference	UNITS ----- -	165477-11 BH112	165477-12 BH113	165477-13 BH114	165477-14 BH115	165477-15 BH116
Depth	-----	0.5	1.0-1.05	1.0	0.1	1.0
Date Sampled		11/04/2017	13/04/2017	11/04/2017	11/04/2017	11/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
Date analysed	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
pH 1:5 soil:water	pH Units	5.6	6.1	6.0	6.1	6.4
Electrical Conductivity 1:5 soil:water	µS/cm	64	12	13	32	14

Misc Inorg - Soil Our Reference: Your Reference	UNITS ----- -	165477-16 BH117	165477-17 BH118	165477-18 BH119	165477-19 BH120	165477-20 BH121
Depth	-----	1.95-2.0	0.1-0.15	0.5	0.5	1.0
Date Sampled		13/04/2017	13/04/2017	10/04/2017	11/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
Date analysed	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
pH 1:5 soil:water	pH Units	6.1	5.8	5.8	8.0	6.6
Electrical Conductivity 1:5 soil:water	µS/cm	14	27	12	130	12



Misc Inorg - Soil Our Reference: Your Reference	UNITS ----- -	165477-21 BH122	165477-22 BH123	165477-23 BH124	165477-24 BH125	165477-25 BH126
Depth	-----	1.0	0.5	0.1	0.5	2.0
Date Sampled		11/04/2017	11/04/2017	10/04/2017	10/04/2017	12/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
Date analysed	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
pH 1:5 soil:water	pH Units	6.6	6.4	6.2	6.1	6.4
Electrical Conductivity 1:5 soil:water	µS/cm	18	15	28	17	8

Misc Inorg - Soil Our Reference: Your Reference	UNITS ----- -	165477-26 BH127	165477-27 BH128	165477-28 BH129	165477-29 BH129	165477-30 BH130
Depth	-----	0.5	1.0	0.5	2.0	0.1
Date Sampled		11/04/2017	12/04/2017	10/04/2017	10/04/2017	10/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
Date analysed	-	22/04/2017	22/04/2017	22/04/2017	22/04/2017	22/04/2017
pH 1:5 soil:water	pH Units	5.9	6.2	6.0	6.1	5.7
Electrical Conductivity 1:5 soil:water	µS/cm	13	11	16	15	25

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)-BTX 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)-BTX 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.
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-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.  F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.  Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. '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-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-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.
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
Metals-020	Determination of various metals by ICP-AES.
Metals-021	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 °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.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25°C in accordance with APHA latest edition 2510 and Rayment & Lyons.

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTRH(C6-C10)/BTEXN in Soil						Base II Duplicate II %RPD		
Date extracted	-			20/04/2017	165477-1	20/04/2017    20/04/2017	LCS-6	20/04/2017
Date analysed	-			21/04/2017	165477-1	20/04/2017    20/04/2017	LCS-6	21/04/2017
TRHC <sub>6</sub> - C <sub>9</sub>	mg/kg	25	Org-016	<25	165477-1	<25    <25	LCS-6	111%
TRHC <sub>6</sub> - C <sub>10</sub>	mg/kg	25	Org-016	<25	165477-1	<25    <25	LCS-6	111%
Benzene	mg/kg	0.2	Org-016	<0.2	165477-1	<0.2    <0.2	LCS-6	116%
Toluene	mg/kg	0.5	Org-016	<0.5	165477-1	<0.5    <0.5	LCS-6	103%
Ethylbenzene	mg/kg	1	Org-016	<1	165477-1	<1    <1	LCS-6	110%
m+p-xylene	mg/kg	2	Org-016	<2	165477-1	<2    <2	LCS-6	113%
o-Xylene	mg/kg	1	Org-016	<1	165477-1	<1    <1	LCS-6	110%
naphthalene	mg/kg	1	Org-014	<1	165477-1	<1    <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	100	165477-1	98    97    RPD: 1	LCS-6	104%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
svTRH(C10-C40) in Soil						Base II Duplicate II %RPD		
Date extracted	-			20/04/2017	165477-1	20/04/2017    20/04/2017	LCS-6	20/04/2017
Date analysed	-			21/04/2017	165477-1	20/04/2017    20/04/2017	LCS-6	21/04/2017
TRHC <sub>10</sub> - C <sub>14</sub>	mg/kg	50	Org-003	<50	165477-1	<50    <50	LCS-6	110%
TRHC <sub>15</sub> - C <sub>28</sub>	mg/kg	100	Org-003	<100	165477-1	<100    <100	LCS-6	104%
TRHC <sub>28</sub> - C <sub>36</sub>	mg/kg	100	Org-003	<100	165477-1	<100    <100	LCS-6	94%
TRH>C <sub>10</sub> -C <sub>16</sub>	mg/kg	50	Org-003	<50	165477-1	<50    <50	LCS-6	110%
TRH>C <sub>16</sub> -C <sub>34</sub>	mg/kg	100	Org-003	<100	165477-1	<100    <100	LCS-6	104%
TRH>C <sub>34</sub> -C <sub>40</sub>	mg/kg	100	Org-003	<100	165477-1	<100    <100	LCS-6	94%
Surrogate o-Terphenyl	%		Org-003	87	165477-1	84    87    RPD: 4	LCS-6	104%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Date extracted	-			20/04/2017	165477-1	20/04/2017    20/04/2017	LCS-6	20/04/2017
Date analysed	-			21/04/2017	165477-1	21/04/2017    21/04/2017	LCS-6	21/04/2017
Naphthalene	mg/kg	0.1	Org-012	<0.1	165477-1	<0.1    <0.1	LCS-6	89%
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012	<0.1	165477-1	<0.1    <0.1	LCS-6	84%
Phenanthrene	mg/kg	0.1	Org-012	<0.1	165477-1	0.1    <0.1	LCS-6	89%
Anthracene	mg/kg	0.1	Org-012	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	165477-1	0.6    0.4    RPD: 40	LCS-6	85%
Pyrene	mg/kg	0.1	Org-012	<0.1	165477-1	0.5    0.3    RPD: 50	LCS-6	82%
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	165477-1	0.2    0.1    RPD: 67	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012	<0.1	165477-1	0.3    0.2    RPD: 40	LCS-6	79%
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	165477-1	0.5    0.3    RPD: 50	[NR]	[NR]

**Client Reference: 84944.01, Bellevue Hill**

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	165477-1	0.3    0.2    RPD: 40	LCS-6	83%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	165477-1	0.3    0.2    RPD: 40	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	165477-1	0.2    0.1    RPD: 67	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	96	165477-1	97    96    RPD: 1	LCS-6	122%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organochlorine Pesticides in soil						Base II Duplicate II %RPD		
Date extracted	-			20/04/2017	165477-1	20/04/2017    20/04/2017	LCS-6	20/04/2017
Date analysed	-			20/04/2017	165477-1	20/04/2017    20/04/2017	LCS-6	20/04/2017
HCB	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1    <0.1	LCS-6	103%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1    <0.1	LCS-6	96%
Heptachlor	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1    <0.1	LCS-6	100%
delta-BHC	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1    <0.1	LCS-6	92%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1    <0.1	LCS-6	103%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1    <0.1	LCS-6	114%
Dieldrin	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1    <0.1	LCS-6	110%
Endrin	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1    <0.1	LCS-6	104%
pp-DDD	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1    <0.1	LCS-6	109%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1    <0.1	LCS-6	81%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-005	101	165477-1	99    98    RPD: 1	LCS-6	114%

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organophosphorus Pesticides						Base II Duplicate II %RPD		
Date extracted	-			20/04/2017	165477-1	20/04/2017    20/04/2017	LCS-6	20/04/2017
Date analysed	-			20/04/2017	165477-1	20/04/2017    20/04/2017	LCS-6	20/04/2017
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
Chlorpyrifos	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1    <0.1	LCS-6	92%
Chlorpyrifos-methyl	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
Diazinon	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1    <0.1	LCS-6	84%
Dimethoate	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1    <0.1	LCS-6	105%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1    <0.1	LCS-6	111%
Malathion	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1    <0.1	LCS-6	79%
Parathion	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1    <0.1	LCS-6	90%
Ronnel	mg/kg	0.1	Org-008	<0.1	165477-1	<0.1    <0.1	LCS-6	83%
Surrogate TCMX	%		Org-008	101	165477-1	99    98    RPD: 1	LCS-6	98%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PCBs in Soil						Base II Duplicate II %RPD		
Date extracted	-			20/04/2017	165477-1	20/04/2017    20/04/2017	LCS-6	20/04/2017
Date analysed	-			20/04/2017	165477-1	20/04/2017    20/04/2017	LCS-6	20/04/2017
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	165477-1	<0.1    <0.1	LCS-6	109%
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	165477-1	<0.1    <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	101	165477-1	99    98    RPD: 1	LCS-6	98%

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QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II %RPD		
Date prepared	-			20/04/2017	165477-1	20/04/2017    20/04/2017	LCS-6	20/04/2017
Date analysed	-			20/04/2017	165477-1	20/04/2017    20/04/2017	LCS-6	20/04/2017
Arsenic	mg/kg	4	Metals-020	<4	165477-1	6    5    RPD: 18	LCS-6	108%
Cadmium	mg/kg	0.4	Metals-020	<0.4	165477-1	<0.4    <0.4	LCS-6	96%
Chromium	mg/kg	1	Metals-020	<1	165477-1	2    2    RPD: 0	LCS-6	105%
Copper	mg/kg	1	Metals-020	<1	165477-1	18    15    RPD: 18	LCS-6	104%
Lead	mg/kg	1	Metals-020	<1	165477-1	22    11    RPD: 67	LCS-6	99%
Mercury	mg/kg	0.1	Metals-021	<0.1	165477-1	<0.1    <0.1	LCS-6	108%
Nickel	mg/kg	1	Metals-020	<1	165477-1	1    1    RPD: 0	LCS-6	96%
Zinc	mg/kg	1	Metals-020	<1	165477-1	12    7    RPD: 53	LCS-6	98%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Misc Soil - Inorg						Base II Duplicate II %RPD		
Date prepared	-			20/04/2017	165477-1	20/04/2017    20/04/2017	LCS-1	20/04/2017
Date analysed	-			20/04/2017	165477-1	20/04/2017    20/04/2017	LCS-1	20/04/2017
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	165477-1	<5    <5	LCS-1	100%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Misc Inorg - Soil						Base II Duplicate II %RPD		
Date prepared	-			22/04/2017	165477-1	22/04/2017    22/04/2017	LCS-6	22/04/2017
Date analysed	-			22/04/2017	165477-1	22/04/2017    22/04/2017	LCS-6	22/04/2017
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	165477-1	6.4    6.1    RPD: 5	LCS-6	102%
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	<1	165477-1	22    21    RPD: 5	LCS-6	107%
QUALITYCONTROL	UNITS	Dup. Sm#		Duplicate		Spike Sm#	Spike % Recovery	
vTRH(C6-C10)/BTEXN in Soil				Base + Duplicate + %RPD				
Date extracted	-	165477-11		20/04/2017    20/04/2017		LCS-5	20/04/2017	
Date analysed	-	165477-11		20/04/2017    20/04/2017		LCS-5	20/04/2017	
TRHC <sub>6</sub> - C <sub>9</sub>	mg/kg	165477-11		<25    <25		LCS-5	102%	
TRHC <sub>6</sub> - C <sub>10</sub>	mg/kg	165477-11		<25    <25		LCS-5	102%	
Benzene	mg/kg	165477-11		<0.2    <0.2		LCS-5	108%	
Toluene	mg/kg	165477-11		<0.5    <0.5		LCS-5	94%	
Ethylbenzene	mg/kg	165477-11		<1    <1		LCS-5	101%	
m+p-xylene	mg/kg	165477-11		<2    <2		LCS-5	103%	
o-Xylene	mg/kg	165477-11		<1    <1		LCS-5	100%	
naphthalene	mg/kg	165477-11		<1    <1		[NR]	[NR]	
Surrogate aaa-Trifluorotoluene	%	165477-11		98    97    RPD: 1		LCS-5	97%	

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QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-11	20/04/2017    20/04/2017	LCS-5	20/04/2017
Date analysed	-	165477-11	20/04/2017    20/04/2017	LCS-5	20/04/2017
TRHC <sub>10</sub> - C <sub>14</sub>	mg/kg	165477-11	<50    <50	LCS-5	109%
TRHC <sub>15</sub> - C <sub>28</sub>	mg/kg	165477-11	<100    <100	LCS-5	104%
TRHC <sub>29</sub> - C <sub>36</sub>	mg/kg	165477-11	<100    <100	LCS-5	106%
TRH>C <sub>10</sub> -C <sub>16</sub>	mg/kg	165477-11	<50    <50	LCS-5	109%
TRH>C <sub>16</sub> -C <sub>34</sub>	mg/kg	165477-11	<100    <100	LCS-5	104%
TRH>C <sub>34</sub> -C <sub>40</sub>	mg/kg	165477-11	<100    <100	LCS-5	106%
Surrogate o-Terphenyl	%	165477-11	82    83    RPD: 1	LCS-5	105%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-11	20/04/2017    20/04/2017	LCS-5	20/04/2017
Date analysed	-	165477-11	21/04/2017    21/04/2017	LCS-5	21/04/2017
Naphthalene	mg/kg	165477-11	<0.1    <0.1	LCS-5	88%
Acenaphthylene	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Acenaphthene	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Fluorene	mg/kg	165477-11	<0.1    <0.1	LCS-5	83%
Phenanthrene	mg/kg	165477-11	<0.1    <0.1	LCS-5	89%
Anthracene	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Fluoranthene	mg/kg	165477-11	<0.1    <0.1	LCS-5	85%
Pyrene	mg/kg	165477-11	<0.1    <0.1	LCS-5	81%
Benzo(a)anthracene	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Chrysene	mg/kg	165477-11	<0.1    <0.1	LCS-5	79%
Benzo(b,j+k)fluoranthene	mg/kg	165477-11	<0.2    <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	165477-11	<0.05    <0.05	LCS-5	80%
Indeno(1,2,3-c,d)pyrene	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	165477-11	98    97    RPD: 1	LCS-5	118%



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QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-11	20/04/2017    20/04/2017	LCS-5	20/04/2017
Date analysed	-	165477-11	20/04/2017    20/04/2017	LCS-5	20/04/2017
HCB	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
alpha-BHC	mg/kg	165477-11	<0.1    <0.1	LCS-5	103%
gamma-BHC	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
beta-BHC	mg/kg	165477-11	<0.1    <0.1	LCS-5	95%
Heptachlor	mg/kg	165477-11	<0.1    <0.1	LCS-5	99%
delta-BHC	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Aldrin	mg/kg	165477-11	<0.1    <0.1	LCS-5	90%
Heptachlor Epoxide	mg/kg	165477-11	<0.1    <0.1	LCS-5	102%
gamma-Chlordane	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Endosulfan I	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
pp-DDE	mg/kg	165477-11	<0.1    <0.1	LCS-5	111%
Dieldrin	mg/kg	165477-11	<0.1    <0.1	LCS-5	108%
Endrin	mg/kg	165477-11	<0.1    <0.1	LCS-5	103%
pp-DDD	mg/kg	165477-11	<0.1    <0.1	LCS-5	107%
Endosulfan II	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
pp-DDT	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	165477-11	<0.1    <0.1	LCS-5	82%
Methoxychlor	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Surrogate TCMX	%	165477-11	98    98    RPD: 0	LCS-5	112%

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QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-11	20/04/2017    20/04/2017	LCS-5	20/04/2017
Date analysed	-	165477-11	20/04/2017    20/04/2017	LCS-5	20/04/2017
Azinphos-methyl (Guthion)	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Bromophos-ethyl	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Chlorpyrifos	mg/kg	165477-11	<0.1    <0.1	LCS-5	93%
Chlorpyrifos-methyl	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Diazinon	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Dichlorvos	mg/kg	165477-11	<0.1    <0.1	LCS-5	101%
Dimethoate	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Ethion	mg/kg	165477-11	<0.1    <0.1	LCS-5	105%
Fenitrothion	mg/kg	165477-11	<0.1    <0.1	LCS-5	112%
Malathion	mg/kg	165477-11	<0.1    <0.1	LCS-5	79%
Parathion	mg/kg	165477-11	<0.1    <0.1	LCS-5	94%
Ronnel	mg/kg	165477-11	<0.1    <0.1	LCS-5	85%
Surrogate TCMX	%	165477-11	98    98    RPD: 0	LCS-5	100%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-11	20/04/2017    20/04/2017	LCS-5	20/04/2017
Date analysed	-	165477-11	20/04/2017    20/04/2017	LCS-5	20/04/2017
Aroclor 1016	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	165477-11	<0.1    <0.1	LCS-5	111%
Aroclor 1260	mg/kg	165477-11	<0.1    <0.1	[NR]	[NR]
Surrogate TCLMX	%	165477-11	98    98    RPD: 0	LCS-5	100%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	165477-11	20/04/2017    20/04/2017	LCS-5	20/04/2017
Date analysed	-	165477-11	20/04/2017    20/04/2017	LCS-5	20/04/2017
Arsenic	mg/kg	165477-11	<4    <4	LCS-5	107%
Cadmium	mg/kg	165477-11	<0.4    <0.4	LCS-5	99%
Chromium	mg/kg	165477-11	4    2    RPD: 67	LCS-5	104%
Copper	mg/kg	165477-11	4    1    RPD: 120	LCS-5	103%
Lead	mg/kg	165477-11	10    4    RPD: 86	LCS-5	100%
Mercury	mg/kg	165477-11	<0.1    <0.1	LCS-5	111%
Nickel	mg/kg	165477-11	2    <1	LCS-5	95%
Zinc	mg/kg	165477-11	11    5    RPD: 75	LCS-5	96%

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QUALITYCONTROL Misc Soil - Inorg	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	165477-11	20/04/2017    20/04/2017	LCS-2	20/04/2017
Date analysed	-	165477-11	20/04/2017    20/04/2017	LCS-2	20/04/2017
Total Phenolics (as Phenol)	mg/kg	165477-11	<5    <5	LCS-2	101%
QUALITYCONTROL Misc Inorg - Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	165477-11	22/04/2017    22/04/2017	LCS-7	22/04/2017
Date analysed	-	165477-11	22/04/2017    22/04/2017	LCS-7	22/04/2017
pH 1:5 soil:water	pH Units	165477-11	5.6    5.9    RPD: 5	LCS-7	102%
Electrical Conductivity 1:5 soil:water	µS/cm	165477-11	64    68    RPD: 6	LCS-7	98%
QUALITYCONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-21	20/04/2017    20/04/2017	165477-2	20/04/2017
Date analysed	-	165477-21	20/04/2017    20/04/2017	165477-2	20/04/2017
TRHC <sub>6</sub> - C <sub>9</sub>	mg/kg	165477-21	<25    <25	165477-2	106%
TRHC <sub>6</sub> - C <sub>10</sub>	mg/kg	165477-21	<25    <25	165477-2	106%
Benzene	mg/kg	165477-21	<0.2    <0.2	165477-2	110%
Toluene	mg/kg	165477-21	<0.5    <0.5	165477-2	99%
Ethylbenzene	mg/kg	165477-21	<1    <1	165477-2	105%
m+p-xylene	mg/kg	165477-21	<2    <2	165477-2	108%
o-Xylene	mg/kg	165477-21	<1    <1	165477-2	105%
naphthalene	mg/kg	165477-21	<1    <1	[NR]	[NR]
Surrogate aaa- Trifluorotoluene	%	165477-21	101    97    RPD: 4	165477-2	100%
QUALITYCONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-21	20/04/2017    20/04/2017	165477-2	20/04/2017
Date analysed	-	165477-21	21/04/2017    21/04/2017	165477-2	20/04/2017
TRHC <sub>10</sub> - C <sub>14</sub>	mg/kg	165477-21	<50    <50	165477-2	100%
TRHC <sub>15</sub> - C <sub>28</sub>	mg/kg	165477-21	<100    <100	165477-2	92%
TRHC <sub>29</sub> - C <sub>36</sub>	mg/kg	165477-21	<100    <100	165477-2	73%
TRH>C <sub>10</sub> -C <sub>16</sub>	mg/kg	165477-21	<50    <50	165477-2	100%
TRH>C <sub>16</sub> -C <sub>34</sub>	mg/kg	165477-21	<100    <100	165477-2	92%
TRH>C <sub>34</sub> -C <sub>40</sub>	mg/kg	165477-21	<100    <100	165477-2	73%
Surrogate o-Terphenyl	%	165477-21	86    82    RPD: 5	165477-2	84%

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QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-21	20/04/2017    20/04/2017	165477-2	20/04/2017
Date analysed	-	165477-21	21/04/2017    21/04/2017	165477-2	21/04/2017
Naphthalene	mg/kg	165477-21	<0.1    <0.1	165477-2	84%
Acenaphthylene	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Acenaphthene	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Fluorene	mg/kg	165477-21	<0.1    <0.1	165477-2	78%
Phenanthrene	mg/kg	165477-21	<0.1    <0.1	165477-2	76%
Anthracene	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Fluoranthene	mg/kg	165477-21	<0.1    <0.1	165477-2	73%
Pyrene	mg/kg	165477-21	<0.1    <0.1	165477-2	75%
Benzo(a)anthracene	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Chrysene	mg/kg	165477-21	<0.1    <0.1	165477-2	70%
Benzo(b,j+k)fluoranthene	mg/kg	165477-21	<0.2    <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	165477-21	<0.05    <0.05	165477-2	76%
Indeno(1,2,3-c,d)pyrene	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	165477-21	93    97    RPD: 4	165477-2	115%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-21	20/04/2017    20/04/2017	165477-2	20/04/2017
Date analysed	-	165477-21	20/04/2017    20/04/2017	165477-2	20/04/2017
HCB	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
alpha-BHC	mg/kg	165477-21	<0.1    <0.1	165477-2	120%
gamma-BHC	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
beta-BHC	mg/kg	165477-21	<0.1    <0.1	165477-2	96%
Heptachlor	mg/kg	165477-21	<0.1    <0.1	165477-2	100%
delta-BHC	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Aldrin	mg/kg	165477-21	<0.1    <0.1	165477-2	92%
Heptachlor Epoxide	mg/kg	165477-21	<0.1    <0.1	165477-2	103%
gamma-Chlordane	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Endosulfan I	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
pp-DDE	mg/kg	165477-21	<0.1    <0.1	165477-2	113%
Dieldrin	mg/kg	165477-21	<0.1    <0.1	165477-2	109%
Endrin	mg/kg	165477-21	<0.1    <0.1	165477-2	103%
pp-DDD	mg/kg	165477-21	<0.1    <0.1	165477-2	108%
Endosulfan II	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
pp-DDT	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	165477-21	<0.1    <0.1	165477-2	79%

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QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Methoxychlor	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Surrogate TCMX	%	165477-21	99    100    RPD: 1	165477-2	112%
QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-21	20/04/2017    20/04/2017	165477-2	20/04/2017
Date analysed	-	165477-21	20/04/2017    20/04/2017	165477-2	20/04/2017
Azinphos-methyl (Guthion)	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Bromophos-ethyl	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Chlorpyrifos	mg/kg	165477-21	<0.1    <0.1	165477-2	89%
Chlorpyrifos-methyl	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Diazinon	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Dichlorvos	mg/kg	165477-21	<0.1    <0.1	165477-2	86%
Dimethoate	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Ethion	mg/kg	165477-21	<0.1    <0.1	165477-2	111%
Fenitrothion	mg/kg	165477-21	<0.1    <0.1	165477-2	101%
Malathion	mg/kg	165477-21	<0.1    <0.1	165477-2	75%
Parathion	mg/kg	165477-21	<0.1    <0.1	165477-2	86%
Ronnel	mg/kg	165477-21	<0.1    <0.1	165477-2	80%
Surrogate TCMX	%	165477-21	99    100    RPD: 1	165477-2	97%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165477-21	20/04/2017    20/04/2017	165477-2	20/04/2017
Date analysed	-	165477-21	20/04/2017    20/04/2017	165477-2	20/04/2017
Aroclor 1016	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	165477-21	<0.1    <0.1	165477-2	107%
Aroclor 1260	mg/kg	165477-21	<0.1    <0.1	[NR]	[NR]
Surrogate TCLMX	%	165477-21	99    100    RPD: 1	165477-2	97%

**Client Reference: 84944.01, Bellevue Hill**

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	165477-21	20/04/2017    20/04/2017	165477-2	20/04/2017
Date analysed	-	165477-21	20/04/2017    20/04/2017	165477-2	20/04/2017
Arsenic	mg/kg	165477-21	<4    <4	165477-2	99%
Cadmium	mg/kg	165477-21	<0.4    <0.4	165477-2	104%
Chromium	mg/kg	165477-21	8    14    RPD: 55	165477-2	107%
Copper	mg/kg	165477-21	4    5    RPD: 22	165477-2	104%
Lead	mg/kg	165477-21	6    5    RPD: 18	165477-2	101%
Mercury	mg/kg	165477-21	<0.1    <0.1	165477-2	108%
Nickel	mg/kg	165477-21	8    12    RPD: 40	165477-2	103%
Zinc	mg/kg	165477-21	7    10    RPD: 35	165477-2	102%
QUALITY CONTROL Misc Soil - Inorg	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	165477-21	20/04/2017    20/04/2017	165477-2	20/04/2017
Date analysed	-	165477-21	20/04/2017    20/04/2017	165477-2	20/04/2017
Total Phenolics (as Phenol)	mg/kg	165477-21	<5    <5	165477-2	93%
QUALITY CONTROL Misc Inorg - Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD		
Date prepared	-	165477-21	22/04/2017    22/04/2017		
Date analysed	-	165477-21	22/04/2017    22/04/2017		
pH 1:5 soil:water	pH Units	165477-21	6.6    6.6    RPD: 0		
Electrical Conductivity 1:5 soil:water	µS/cm	165477-21	18    18    RPD: 0		
QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	165477-22	20/04/2017
Date analysed	-	[NT]	[NT]	165477-22	20/04/2017
TRHC <sub>6</sub> - C <sub>9</sub>	mg/kg	[NT]	[NT]	165477-22	101%
TRHC <sub>6</sub> - C <sub>10</sub>	mg/kg	[NT]	[NT]	165477-22	101%
Benzene	mg/kg	[NT]	[NT]	165477-22	106%
Toluene	mg/kg	[NT]	[NT]	165477-22	92%
Ethylbenzene	mg/kg	[NT]	[NT]	165477-22	100%
m+p-xylene	mg/kg	[NT]	[NT]	165477-22	103%
o-Xylene	mg/kg	[NT]	[NT]	165477-22	100%
naphthalene	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate aaa- Trifluorotoluene	%	[NT]	[NT]	165477-22	96%

**Client Reference: 84944.01, Bellevue Hill**

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	165477-22	20/04/2017
Date analysed	-	[NT]	[NT]	165477-22	21/04/2017
TRHC <sub>10</sub> - C <sub>14</sub>	mg/kg	[NT]	[NT]	165477-22	105%
TRHC <sub>15</sub> - C <sub>28</sub>	mg/kg	[NT]	[NT]	165477-22	98%
TRHC <sub>29</sub> - C <sub>36</sub>	mg/kg	[NT]	[NT]	165477-22	103%
TRH>C <sub>10</sub> -C <sub>16</sub>	mg/kg	[NT]	[NT]	165477-22	105%
TRH>C <sub>16</sub> -C <sub>34</sub>	mg/kg	[NT]	[NT]	165477-22	98%
TRH>C <sub>34</sub> -C <sub>40</sub>	mg/kg	[NT]	[NT]	165477-22	103%
Surrogate o-Terphenyl	%	[NT]	[NT]	165477-22	93%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	165477-22	20/04/2017
Date analysed	-	[NT]	[NT]	165477-22	21/04/2017
Naphthalene	mg/kg	[NT]	[NT]	165477-22	84%
Acenaphthylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	[NT]	[NT]	165477-22	78%
Phenanthrene	mg/kg	[NT]	[NT]	165477-22	77%
Anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	[NT]	[NT]	165477-22	73%
Pyrene	mg/kg	[NT]	[NT]	165477-22	74%
Benzo(a)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	[NT]	[NT]	165477-22	67%
Benzo(b,j+k)fluoranthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	[NT]	[NT]	165477-22	77%
Indeno(1,2,3-c,d)pyrene	mg/kg	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	[NT]	[NT]	165477-22	117%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	165477-22	20/04/2017
Date analysed	-	[NT]	[NT]	165477-22	20/04/2017
HCB	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	[NT]	[NT]	165477-22	109%
gamma-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	[NT]	[NT]	165477-22	98%
Heptachlor	mg/kg	[NT]	[NT]	165477-22	101%
delta-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	165477-22	94%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	165477-22	106%
gamma-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	[NT]	[NT]	165477-22	116%
Dieldrin	mg/kg	[NT]	[NT]	165477-22	113%
Endrin	mg/kg	[NT]	[NT]	165477-22	104%
pp-DDD	mg/kg	[NT]	[NT]	165477-22	110%
Endosulfan II	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	[NT]	[NT]	165477-22	78%
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%	[NT]	[NT]	165477-22	116%



QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	165477-22	20/04/2017
Date analysed	-	[NT]	[NT]	165477-22	20/04/2017
Azinphos-methyl (Guthion)	mg/kg	[NT]	[NT]	[NR]	[NR]
Bromophos-ethyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos	mg/kg	[NT]	[NT]	165477-22	93%
Chlorpyrifos-methyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Diazinon	mg/kg	[NT]	[NT]	[NR]	[NR]
Dichlorvos	mg/kg	[NT]	[NT]	165477-22	84%
Dimethoate	mg/kg	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	[NT]	[NT]	165477-22	113%
Fenitrothion	mg/kg	[NT]	[NT]	165477-22	75%
Malathion	mg/kg	[NT]	[NT]	165477-22	77%
Parathion	mg/kg	[NT]	[NT]	165477-22	86%
Ronnel	mg/kg	[NT]	[NT]	165477-22	83%
Surrogate TCMX	%	[NT]	[NT]	165477-22	98%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	165477-22	20/04/2017
Date analysed	-	[NT]	[NT]	165477-22	20/04/2017
Aroclor 1016	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1221	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1232	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1242	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1248	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1254	mg/kg	[NT]	[NT]	165477-22	110%
Aroclor 1260	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	165477-22	98%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	165477-22	20/04/2017
Date analysed	-	[NT]	[NT]	165477-22	20/04/2017
Arsenic	mg/kg	[NT]	[NT]	165477-22	97%
Cadmium	mg/kg	[NT]	[NT]	165477-22	100%
Chromium	mg/kg	[NT]	[NT]	165477-22	100%
Copper	mg/kg	[NT]	[NT]	165477-22	104%
Lead	mg/kg	[NT]	[NT]	165477-22	100%
Mercury	mg/kg	[NT]	[NT]	165477-22	116%
Nickel	mg/kg	[NT]	[NT]	165477-22	98%
Zinc	mg/kg	[NT]	[NT]	165477-22	101%

**Client Reference: 84944.01, Bellevue Hill**

QUALITY CONTROL Misc Soil - Inorg	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	165477-22	20/04/2017
Date analysed	-	[NT]	[NT]	165477-22	20/04/2017
Total Phenolics (as Phenol)	mg/kg	[NT]	[NT]	165477-22	96%

**Report Comments:**

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 165477-1 for Pb and Zn. Therefore a triplicate result has been issued as laboratory sample number 165477-31.

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 165477-11 for Pb and Zn. Therefore a triplicate result has been issued as laboratory sample number 165477-32.

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 165477-21 for Cr. Therefore a triplicate result has been issued as laboratory sample number 165477-33.

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 165477-11, 19, 23, 24 were sub-sampled from jars and Samples 165477-1 to 10, 12 to 18, 20 to 22, 25 to 30 were sub-sampled from bags provided by the client.

Asbestos ID was analysed by Approved Identifier:	Lucy Zhu
Asbestos ID was authorised by Approved Signatory:	Paul Ching

INS: Insufficient sample for this test  
NR: 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.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

## SAMPLE RECEIPT ADVICE

Client Details	
Client	Douglas Partners Pty Ltd
Attention	Peter Oitmaa

Sample Login Details	
Your Reference	84944.01, Bellevue Hill
Envirolab Reference	<b>165477</b>
Date Sample Received	19/04/2017
Date Instructions Received	19/04/2017
Date Results Expected to be Reported	<b>27/04/2017</b>

Sample Condition	
Samples received in appropriate condition for analysis	YES
No. of Samples Provided	30 soils
Turnaround Time Requested	Standard
Temperature on receipt (°C)	16.0
Cooling Method	Ice
Sampling Date Provided	YES

Comments
Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples

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@envirolabservices.com.au	Email: jhurst@envirolabservices.com.au

*Sample and Testing Details on following page*


[illegible]



Project Name: Bellevue Hill .....  
 Project No: 84944.01 ..... Sampler: R Wong .....  
 Project Mgr: Peter Oitmaa ..... Mob. Phone: 0412 574 518  
 Email: Peter.Oitmaa@DouglasPartners.com.au .....  
 Date Required: Standard t/a Lab Quote No. ....

To: Envirolab Services  
 12 Ashley Street, Chatswood NSW 2068  
 Attn: Tania Notaras  
 Phone: 02 9910 6200 Fax: 02 9910 6201  
 Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth (m)	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analytes				Notes
						Combo	PH, EC			
BH101	0.5	1	12/4	S	Jar/bag	X	X			
BH101	4.0	2	12/4	S	Jar/bag	X	X			
BH102	0.5	3	12/4	S	Jar/bag	X	X			
BH102	2.0	4	12/4	S	Jar/bag	X	X			
BH103	0.1	5	11/4	S	Jar/bag	X	X			
BH103	1.0	6	11/4	S	Jar/bag	X	X			
BH104	1.0	7	12/4	S	Jar/bag	X	X			
BH105	1.0	8	10/4	S	Jar/bag	X	X			
BH111	0.45-0.5	9	13/4	S	Jar/bag	X	X			
BH111	2.9-3.0	10	13/4	S	Jar/bag	X	X			
BH112	0.5	11	11/4	S	Jar/bag	X	X			
BH113	1.0-1.05	12	13/4	S	Jar/bag	X	X			

  
**Envirolab Services**  
 12 Ashley St  
 Chatswood NSW 2067  
 Ph: (02) 9910 6200

Job No: 165477  
 Date Received: 19/4  
 Time Received: 15:30  
 Received by: AZ  
 Temp: Cool Ambient  
 Cooling: Icepack  
 Security: Intact/Broken/None

Lab Report No: ..... Phone: (02) 9809 0666  
 Send Results to: Peter.Oitmaa@DouglasPartners.com.au Address: 96 Hermitage Road, West Ryde 2114 Fax: (02) 9809 4095  
 Relinquished by: Signed: Received By: AZ Date & Time: 19/4  
 Relinquished by: Signed: Received By: Date & Time:





**Douglas Partners**  
Geotechnics · Environment · Groundwater

## CHAIN OF CUSTODY

Project Name: Bellevue Hill .....  
Project No: 84944.01 ..... Sampler: R Wong .....  
Project Mgr: Peter Oitmaa ..... Mob. Phone: 0412 574 518  
Email: Peter.Oitmaa@DouglasPartners.com.au .....  
Date Required: Standard t/a Lab Quote No. ....

To: Envirolab Services  
12 Ashley Street, Chatswood NSW 2068  
Attn: Tania Notaras  
Phone: 02 9910 6200 Fax: 02 9910 6201  
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth (m)	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analytes						Notes
						Combo	PH, EC					
165477 BH114	1.0	13	11/4	S	Jar/bag	X	X					
BH115	0.1	14	11/4	S	Jar/bag	X	X					
BH116	1.0	15	11/4	S	Jar/bag	X	X					
BH117	1.95-2.0	16	13/4	S	Jar/bag	X	X					
BH118	0.1-0.15	17	13/4	S	Jar/bag	X	X					
BH119	0.5	18	10/4	S	Jar/bag	X	X					
BH120	0.5	19	11/4	S	Jar/bag	X	X					
BH121	1.0	20	12/4	S	Jar/bag	X	X					
BH122	1.0	21	11/4	S	Jar/bag	X	X					
BH123	0.5	22	11/4	S	Jar/bag	X	X					
BH124	0.1	23	10/4	S	Jar/bag	X	X					
BH125	0.5	24	10/4	S	Jar/bag	X	X					

Lab Report No. ....

Phone: (02) 9809 0666

Send Results to: Peter.Oitmaa@DouglasPartners.com.au

Address: 96 Hermitage Road, West Ryde 2114

Fax: (02) 9809 4095

Relinquished by:

Signed:

Date & Time:

Received By:

ELS

Date & Time: 19/4 1500

Relinquished by:

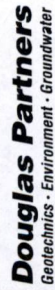
Signed:

Date & Time:

Received By:

Date & Time:





## CHAIN OF CUSTODY

To: Envirolab Services  
12 Ashley Street, Chatswood NSW 2068  
Attn: Tania Notaras  
Phone: 02 9910 6200 Fax: 02 9910 6201  
Email: [tnotaras@envirolabservices.com.au](mailto:tnotaras@envirolabservices.com.au)

[illegible]

Lab Report No. ....	Phone: (02) 9809 0666
Send Results to: Peter.Oitmaa@DouglasPartners.com.au	Address: 96 Hermitage Road, West Ryde 2114
Relinquished by:	Signed: _____ Date & Time: _____
Relinquished by:	Signed: _____ Date & Time: _____

**CERTIFICATE OF ANALYSIS**

**130980**

**Client:**

**Douglas Partners Pty Ltd**  
96 Hermitage Rd  
West Ryde  
NSW 2114

**Attention:** Peter Oitmaa

**Sample log in details:**

Your Reference:	<b>84944.00, Bellevue Hill</b>
No. of samples:	10 Soils
Date samples received / completed instructions received	10/07/2015 / 10/07/2015

**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:	17/07/15 / 17/07/15
Date of Preliminary Report:	Not Issued

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**Results Approved By:**



Jacinta Hurst  
Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil	UNITS	130980-1	130980-2	130980-3	130980-4	130980-5
Our Reference:	-----	BH2	BH2	BH2	BH2	BH4
Your Reference	-----	1.0	2.0	3.0	4.0	1.0
Depth		7/07/2015	7/07/2015	7/07/2015	7/07/2015	3/07/2015
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
TRHC <sub>6</sub> - C <sub>9</sub>	mg/kg	<25	<25	<25	<25	<25
TRHC <sub>6</sub> - C <sub>10</sub>	mg/kg	<25	<25	<25	<25	<25
vTPHC <sub>6</sub> - C <sub>10</sub> 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	%	110	111	112	111	117

vTRH(C6-C10)/BTEXN in Soil	UNITS	130980-6	130980-7	130980-8	130980-9	130980-10
Our Reference:	-----	BH4	BH4	BH4	BH10	BH10
Your Reference	-----	2.0	3.0	4.0	1.0	2.0
Depth		3/07/2015	3/07/2015	3/07/2015	6/07/2015	6/07/2015
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
TRHC <sub>6</sub> - C <sub>9</sub>	mg/kg	<25	<25	<25	<25	<25
TRHC <sub>6</sub> - C <sub>10</sub>	mg/kg	<25	<25	<25	<25	<25
vTPHC <sub>6</sub> - C <sub>10</sub> 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	%	110	121	106	117	120

svTRH (C10-C40) in Soil	UNITS	130980-1	130980-2	130980-3	130980-4	130980-5
Our Reference:	-----	BH2	BH2	BH2	BH2	BH4
Your Reference	-----	1.0	2.0	3.0	4.0	1.0
Depth		7/07/2015	7/07/2015	7/07/2015	7/07/2015	3/07/2015
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	14/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
TRHC <sub>10</sub> - C <sub>14</sub>	mg/kg	<50	<50	<50	<50	<50
TRHC <sub>15</sub> - C <sub>28</sub>	mg/kg	<100	<100	<100	<100	<100
TRHC <sub>29</sub> - C <sub>36</sub>	mg/kg	<100	<100	<100	<100	<100
TRH>C <sub>10</sub> -C <sub>16</sub>	mg/kg	<50	<50	<50	<50	<50
TRH>C <sub>10</sub> - C <sub>16</sub> less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C <sub>16</sub> -C <sub>34</sub>	mg/kg	<100	<100	<100	<100	<100
TRH>C <sub>34</sub> -C <sub>40</sub>	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	81	72	79	76	117

svTRH (C10-C40) in Soil	UNITS	130980-6	130980-7	130980-8	130980-9	130980-10
Our Reference:	-----	BH4	BH4	BH4	BH10	BH10
Your Reference	-----	2.0	3.0	4.0	1.0	2.0
Depth		3/07/2015	3/07/2015	3/07/2015	6/07/2015	6/07/2015
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
TRHC <sub>10</sub> - C <sub>14</sub>	mg/kg	<50	<50	<50	<50	<50
TRHC <sub>15</sub> - C <sub>28</sub>	mg/kg	<100	<100	<100	<100	<100
TRHC <sub>29</sub> - C <sub>36</sub>	mg/kg	<100	<100	<100	<100	<100
TRH>C <sub>10</sub> -C <sub>16</sub>	mg/kg	<50	<50	<50	<50	<50
TRH>C <sub>10</sub> - C <sub>16</sub> less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C <sub>16</sub> -C <sub>34</sub>	mg/kg	<100	<100	<100	<100	<100
TRH>C <sub>34</sub> -C <sub>40</sub>	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	80	76	78	82	78

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	130980-1 BH2 1.0 7/07/2015 Soil	130980-2 BH2 2.0 7/07/2015 Soil	130980-3 BH2 3.0 7/07/2015 Soil	130980-4 BH2 4.0 7/07/2015 Soil	130980-5 BH4 1.0 3/07/2015 Soil
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	14/07/2015
Date analysed	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	14/07/2015
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
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	1.4
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.9
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.9
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.4
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.4
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	0.5
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	0.3
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<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	<0.1	<0.1	0.2
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	NIL (+)VE	NIL (+)VE	5.8
Surrogate p-Terphenyl-d14	%	95	84	101	96	95

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	130980-6 BH4 2.0 3/07/2015 Soil	130980-7 BH4 3.0 3/07/2015 Soil	130980-8 BH4 4.0 3/07/2015 Soil	130980-9 BH10 1.0 6/07/2015 Soil	130980-10 BH10 2.0 6/07/2015 Soil
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
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	0.7	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	0.5	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	6.5	0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	1.8	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	5.0	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	4.7	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	2.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	1.8	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	2.4	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	1.6	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	0.9	<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	0.7	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	2.3	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	2.3	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	2.3	<0.5
Total Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	29	0.10
Surrogate p-Terphenyl-d14	%	95	95	104	105	96

Organochlorine Pesticides in soil						
Our Reference:	UNITS	130980-1	130980-2	130980-3	130980-4	130980-5
Your Reference	-----	BH2	BH2	BH2	BH2	BH4
Depth	-----	1.0	2.0	3.0	4.0	1.0
Date Sampled		7/07/2015	7/07/2015	7/07/2015	7/07/2015	3/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
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	%	89	79	88	83	87

Organochlorine Pesticides in soil						
Our Reference:	UNITS	130980-6	130980-7	130980-8	130980-9	130980-10
Your Reference	-----	BH4	BH4	BH4	BH10	BH10
Depth	-----	2.0	3.0	4.0	1.0	2.0
Date Sampled		3/07/2015	3/07/2015	3/07/2015	6/07/2015	6/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
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	%	79	86	85	83	84



Organophosphorus Pesticides						
Our Reference:	UNITS	130980-1	130980-2	130980-3	130980-4	130980-5
Your Reference	-----	BH2	BH2	BH2	BH2	BH4
Depth	-----	1.0	2.0	3.0	4.0	1.0
Date Sampled		7/07/2015	7/07/2015	7/07/2015	7/07/2015	3/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
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	%	89	79	88	83	87

Organophosphorus Pesticides						
Our Reference:	UNITS	130980-6	130980-7	130980-8	130980-9	130980-10
Your Reference	-----	BH4	BH4	BH4	BH10	BH10
Depth	-----	2.0	3.0	4.0	1.0	2.0
Date Sampled		3/07/2015	3/07/2015	3/07/2015	6/07/2015	6/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
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	%	79	86	85	83	84

PCBs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	130980-1 BH2 1.0 7/07/2015 Soil	130980-2 BH2 2.0 7/07/2015 Soil	130980-3 BH2 3.0 7/07/2015 Soil	130980-4 BH2 4.0 7/07/2015 Soil	130980-5 BH4 1.0 3/07/2015 Soil
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
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	%	89	79	88	83	87

PCBs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	130980-6 BH4 2.0 3/07/2015 Soil	130980-7 BH4 3.0 3/07/2015 Soil	130980-8 BH4 4.0 3/07/2015 Soil	130980-9 BH10 1.0 6/07/2015 Soil	130980-10 BH10 2.0 6/07/2015 Soil
Date extracted	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
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	%	79	86	85	83	84

Acid Extractable metals in soil						
Our Reference:	UNITS	130980-1	130980-2	130980-3	130980-4	130980-5
Your Reference	-----	BH2	BH2	BH2	BH2	BH4
Depth	-----	1.0	2.0	3.0	4.0	1.0
Date Sampled		7/07/2015	7/07/2015	7/07/2015	7/07/2015	3/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Arsenic	mg/kg	41	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	3	2	1	2	2
Copper	mg/kg	5	1	<1	<1	2
Lead	mg/kg	3	3	1	1	5
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	<1	<1	<1	<1
Zinc	mg/kg	36	3	1	<1	3

Acid Extractable metals in soil						
Our Reference:	UNITS	130980-6	130980-7	130980-8	130980-9	130980-10
Your Reference	-----	BH4	BH4	BH4	BH10	BH10
Depth	-----	2.0	3.0	4.0	1.0	2.0
Date Sampled		3/07/2015	3/07/2015	3/07/2015	6/07/2015	6/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	1	1	2	2	2
Copper	mg/kg	1	<1	1	22	<1
Lead	mg/kg	9	4	14	10	2
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	<1	<1	1	1
Zinc	mg/kg	3	2	4	10	1

Acid Extractable metals in soil		
Our Reference:	UNITS	130980-11
Your Reference	-----	BH2 - TRIPLICATE
Depth	-----	1.0
Date Sampled		07/07/2015
Type of sample		Soil
Date digested	-	13/07/2015
Date analysed	-	13/07/2015
Arsenic	mg/kg	20
Cadmium	mg/kg	<0.4
Chromium	mg/kg	2
Copper	mg/kg	4
Lead	mg/kg	5
Mercury	mg/kg	<0.1
Nickel	mg/kg	1

Acid Extractable metals in soil		
Our Reference:	UNITS	130980-11
Your Reference	-----	BH2 -
		TRIPLICATE
Depth	-----	1.0
Date Sampled		07/07/2015
Type of sample		Soil
Zinc	mg/kg	25

Misc Soil - Inorg						
Our Reference:	UNITS	130980-1	130980-2	130980-3	130980-4	130980-5
Your Reference	-----	BH2	BH2	BH2	BH2	BH4
Depth	-----	1.0	2.0	3.0	4.0	1.0
Date Sampled		7/07/2015	7/07/2015	7/07/2015	7/07/2015	3/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference:	UNITS	130980-6	130980-7	130980-8	130980-9	130980-10
Your Reference	-----	BH4	BH4	BH4	BH10	BH10
Depth	-----	2.0	3.0	4.0	1.0	2.0
Date Sampled		3/07/2015	3/07/2015	3/07/2015	6/07/2015	6/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Inorg - Soil						
Our Reference:	UNITS	130980-1	130980-2	130980-3	130980-4	130980-5
Your Reference	-----	BH2	BH2	BH2	BH2	BH4
Depth	-----	1.0	2.0	3.0	4.0	1.0
Date Sampled		7/07/2015	7/07/2015	7/07/2015	7/07/2015	3/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
pH 1:5 soil:water	pH Units	6.3	6.5	6.5	5.8	6.3
Electrical Conductivity 1:5 soil:water	µS/cm	21	13	13	14	14
Chloride, Cl 1:5 soil:water	mg/kg	<10	<10	<10	<10	<10
Sulphate, SO4 1:5 soil:water	mg/kg	<10	<10	<10	<10	<10

Misc Inorg - Soil						
Our Reference:	UNITS	130980-6	130980-7	130980-8	130980-9	130980-10
Your Reference	-----	BH4	BH4	BH4	BH10	BH10
Depth	-----	2.0	3.0	4.0	1.0	2.0
Date Sampled		3/07/2015	3/07/2015	3/07/2015	6/07/2015	6/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
pH 1:5 soil:water	pH Units	6.1	6.0	6.2	9.9	7.2
Electrical Conductivity 1:5 soil:water	µS/cm	12	11	14	87	36
Chloride, Cl 1:5 soil:water	mg/kg	<10	<10	<10	<10	<10
Sulphate, SO4 1:5 soil:water	mg/kg	<10	<10	<10	38	31

Moisture						
Our Reference:	UNITS	130980-1	130980-2	130980-3	130980-4	130980-5
Your Reference	-----	BH2	BH2	BH2	BH2	BH4
Depth	-----	1.0	2.0	3.0	4.0	1.0
Date Sampled		7/07/2015	7/07/2015	7/07/2015	7/07/2015	3/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
Moisture	%	7.7	4.0	4.6	5.5	4.4

Moisture						
Our Reference:	UNITS	130980-6	130980-7	130980-8	130980-9	130980-10
Your Reference	-----	BH4	BH4	BH4	BH10	BH10
Depth	-----	2.0	3.0	4.0	1.0	2.0
Date Sampled		3/07/2015	3/07/2015	3/07/2015	6/07/2015	6/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	13/07/2015	13/07/2015	13/07/2015	13/07/2015	13/07/2015
Date analysed	-	14/07/2015	14/07/2015	14/07/2015	14/07/2015	14/07/2015
Moisture	%	7.4	6.3	20	1.5	1.9

Asbestos ID - soils						
Our Reference:	UNITS	130980-1	130980-2	130980-3	130980-4	130980-5
Your Reference	-----	BH2	BH2	BH2	BH2	BH4
Depth	-----	1.0	2.0	3.0	4.0	1.0
Date Sampled		7/07/2015	7/07/2015	7/07/2015	7/07/2015	3/07/2015
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	16/07/2015	16/07/2015	16/07/2015	16/07/2015	16/07/2015
Sample mass tested	g	Approx 60g	Approx 70g	Approx 70g	Approx 75g	Approx 65g
Sample Description	-	Brown coarse- grained sandy soil	Brown coarse- grained sandy soil	Brown coarse- grained sandy soil	Brown coarse- grained sandy soil	Brown coarse- grained sandy soil
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	130980-6	130980-7	130980-8	130980-9
Your Reference	-----	BH4	BH4	BH4	BH10
Depth	-----	2.0	3.0	4.0	1.0
Date Sampled		3/07/2015	3/07/2015	3/07/2015	6/07/2015
Type of sample		Soil	Soil	Soil	Soil
Date analysed	-	16/07/2015	16/07/2015	16/07/2015	16/07/2015
Sample mass tested	g	Approx 75g	Approx 75g	Approx 60g	Approx 40g
Sample Description	-	Brown coarse- grained sandy soil	Brown coarse- grained sandy soil	Grey coarse- grained sandy soil	Brown coarse- grained sandy soil
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



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-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-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25oC in accordance with APHA latest edition 2510 and Rayment & Lyons.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B.
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	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTRH(C6-C10)/BTEXN in Soil						Base II Duplicate II %RPD		
Date extracted	-			13/07/2015	130980-1	13/07/2015    13/07/2015	LCS-3	13/07/2015
Date analysed	-			14/07/2015	130980-1	14/07/2015    14/07/2015	LCS-3	14/07/2015
TRHC <sub>6</sub> - C <sub>9</sub>	mg/kg	25	Org-016	<25	130980-1	<25    <25	LCS-3	124%
TRHC <sub>6</sub> - C <sub>10</sub>	mg/kg	25	Org-016	<25	130980-1	<25    <25	LCS-3	124%
Benzene	mg/kg	0.2	Org-016	<0.2	130980-1	<0.2    <0.2	LCS-3	125%
Toluene	mg/kg	0.5	Org-016	<0.5	130980-1	<0.5    <0.5	LCS-3	122%
Ethylbenzene	mg/kg	1	Org-016	<1	130980-1	<1    <1	LCS-3	122%
m+p-xylene	mg/kg	2	Org-016	<2	130980-1	<2    <2	LCS-3	125%
o-Xylene	mg/kg	1	Org-016	<1	130980-1	<1    <1	LCS-3	120%
naphthalene	mg/kg	1	Org-014	<1	130980-1	<1    <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	119	130980-1	110    115    RPD: 4	LCS-3	117%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
svTRH(C10-C40) in Soil						Base II Duplicate II %RPD		
Date extracted	-			13/07/2015	130980-1	13/07/2015    13/07/2015	LCS-3	13/07/2015
Date analysed	-			14/07/2015	130980-1	14/07/2015    14/07/2015	LCS-3	14/07/2015
TRHC <sub>10</sub> - C <sub>14</sub>	mg/kg	50	Org-003	<50	130980-1	<50    <50	LCS-3	90%
TRHC <sub>15</sub> - C <sub>28</sub>	mg/kg	100	Org-003	<100	130980-1	<100    <100	LCS-3	95%
TRHC <sub>28</sub> - C <sub>36</sub>	mg/kg	100	Org-003	<100	130980-1	<100    210	LCS-3	77%
TRH>C <sub>10</sub> -C <sub>16</sub>	mg/kg	50	Org-003	<50	130980-1	<50    <50	LCS-3	90%
TRH>C <sub>16</sub> -C <sub>34</sub>	mg/kg	100	Org-003	<100	130980-1	<100    160	LCS-3	95%
TRH>C <sub>34</sub> -C <sub>40</sub>	mg/kg	100	Org-003	<100	130980-1	<100    210	LCS-3	77%
Surrogate o-Terphenyl	%		Org-003	82	130980-1	81    87    RPD: 7	LCS-3	89%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Date extracted	-			13/07/2015	130980-1	13/07/2015    13/07/2015	LCS-3	13/07/2015
Date analysed	-			13/07/2015	130980-1	13/07/2015    13/07/2015	LCS-3	13/07/2015
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1    <0.1	LCS-3	113%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1    <0.1	LCS-3	95%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1    <0.1	LCS-3	105%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1    <0.1	LCS-3	98%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1    <0.1	LCS-3	103%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1    <0.1	LCS-3	97%
Benzo(b,j+k) fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	130980-1	<0.2    <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	130980-1	<0.05    <0.05	LCS-3	105%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	101	130980-1	95    125    RPD: 27	LCS-3	104%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organochlorine Pesticides in soil						Base II Duplicate II %RPD		
Date extracted	-			13/07/2015	130980-1	13/07/2015    13/07/2015	LCS-3	13/07/2015
Date analysed	-			14/07/2015	130980-1	14/07/2015    14/07/2015	LCS-3	14/07/2015
HCB	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1    <0.1	LCS-3	88%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1    <0.1	LCS-3	85%
Heptachlor	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1    <0.1	LCS-3	88%
delta-BHC	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1    <0.1	LCS-3	96%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1    <0.1	LCS-3	86%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1    <0.1	LCS-3	87%
Dieldrin	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1    <0.1	LCS-3	89%
Endrin	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1    <0.1	LCS-3	97%
pp-DDD	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1    <0.1	LCS-3	94%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1    <0.1	LCS-3	86%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-005	87	130980-1	89    96    RPD: 8	LCS-3	82%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organophosphorus Pesticides						Base II Duplicate II %RPD		
Date extracted	-			13/07/2015	130980-1	13/07/2015    13/07/2015	LCS-3	13/07/2015
Date analysed	-			14/07/2015	130980-1	14/07/2015    14/07/2015	LCS-3	14/07/2015
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1    <0.1	LCS-3	99%
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Chlorpyrifos	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1    <0.1	LCS-3	103%
Chlorpyrifos-methyl	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Diazinon	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1    <0.1	LCS-3	104%
Dimethoate	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1    <0.1	LCS-3	123%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1    <0.1	LCS-3	101%
Malathion	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1    <0.1	LCS-3	78%
Parathion	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1    <0.1	LCS-3	108%
Ronnel	mg/kg	0.1	Org-008	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-008	87	130980-1	89    96    RPD: 8	LCS-3	84%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PCBs in Soil						Base II Duplicate II %RPD		
Date extracted	-			13/07/2015	130980-1	13/07/2015    13/07/2015	LCS-3	13/07/2015
Date analysed	-			14/07/2015	130980-1	14/07/2015    14/07/2015	LCS-3	14/07/2015
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	130980-1	<0.1    <0.1	LCS-3	122%
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	130980-1	<0.1    <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	87	130980-1	89    96    RPD: 8	LCS-3	83%

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II %RPD		
Date digested	-			13/07/2015	130980-1	13/07/2015    13/07/2015	LCS-8	13/07/2015
Date analysed	-			13/07/2015	130980-1	13/07/2015    13/07/2015	LCS-8	13/07/2015
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	130980-1	41    14    RPD: 98	LCS-8	106%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	130980-1	<0.4    <0.4	LCS-8	94%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	130980-1	3    2    RPD: 40	LCS-8	103%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	130980-1	5    5    RPD: 0	LCS-8	104%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	130980-1	3    7    RPD: 80	LCS-8	98%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	130980-1	<0.1    <0.1	LCS-8	90%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	130980-1	<1    1	LCS-8	100%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	130980-1	36    21    RPD: 53	LCS-8	102%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Misc Soil - Inorg						Base II Duplicate II %RPD		
Date prepared	-			13/07/2015	130980-1	13/07/2015    13/07/2015	LCS-1	13/07/2015
Date analysed	-			13/07/2015	130980-1	13/07/2015    13/07/2015	LCS-1	13/07/2015
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	130980-1	<5    <5	LCS-1	109%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Misc Inorg - Soil						Base II Duplicate II %RPD		
Date prepared	-			14/07/2015	130980-1	14/07/2015    14/07/2015	LCS-1	14/07/2015
Date analysed	-			14/07/2015	130980-1	14/07/2015    14/07/2015	LCS-1	14/07/2015
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	130980-1	6.3    6.4    RPD: 2	LCS-1	102%
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	<1	130980-1	21    23    RPD: 9	LCS-1	100%
Chloride, Cl 1:5 soil:water	mg/kg	10	Inorg-081	<10	130980-1	<10    <10	LCS-1	95%
Sulphate, SO4 1:5 soil:water	mg/kg	10	Inorg-081	<10	130980-1	<10    <10	LCS-1	98%

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	130980-2	13/07/2015
Date analysed	-	[NT]	[NT]	130980-2	14/07/2015
TRHC <sub>6</sub> - C <sub>9</sub>	mg/kg	[NT]	[NT]	130980-2	118%
TRHC <sub>6</sub> - C <sub>10</sub>	mg/kg	[NT]	[NT]	130980-2	118%
Benzene	mg/kg	[NT]	[NT]	130980-2	118%
Toluene	mg/kg	[NT]	[NT]	130980-2	116%
Ethylbenzene	mg/kg	[NT]	[NT]	130980-2	116%
m+p-xylene	mg/kg	[NT]	[NT]	130980-2	120%
o-Xylene	mg/kg	[NT]	[NT]	130980-2	114%
naphthalene	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate aaa- Trifluorotoluene	%	[NT]	[NT]	130980-2	115%
QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	130980-5	14/07/2015    13/07/2015	130980-2	13/07/2015
Date analysed	-	130980-5	14/07/2015    14/07/2015	130980-2	14/07/2015
TRHC <sub>10</sub> - C <sub>14</sub>	mg/kg	130980-5	<50    <50	130980-2	95%
TRHC <sub>15</sub> - C <sub>28</sub>	mg/kg	130980-5	<100    810	130980-2	98%
TRHC <sub>29</sub> - C <sub>36</sub>	mg/kg	130980-5	<100    310	130980-2	68%
TRH>C <sub>10</sub> -C <sub>16</sub>	mg/kg	130980-5	<50    50	130980-2	95%
TRH>C <sub>16</sub> -C <sub>34</sub>	mg/kg	130980-5	<100    1000	130980-2	98%
TRH>C <sub>34</sub> -C <sub>40</sub>	mg/kg	130980-5	<100    140	130980-2	68%
Surrogate o-Terphenyl	%	130980-5	117    105    RPD: 11	130980-2	99%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	130980-5	14/07/2015    13/07/2015	130980-2	13/07/2015
Date analysed	-	130980-5	14/07/2015    13/07/2015	130980-2	13/07/2015
Naphthalene	mg/kg	130980-5	0.2    0.4    RPD: 67	130980-2	104%
Acenaphthylene	mg/kg	130980-5	<0.1    0.3	[NR]	[NR]
Acenaphthene	mg/kg	130980-5	0.1    5.6    RPD: 193	[NR]	[NR]
Fluorene	mg/kg	130980-5	<0.1    3.7	130980-2	90%
Phenanthrene	mg/kg	130980-5	1.4    52    RPD: 190	130980-2	96%
Anthracene	mg/kg	130980-5	0.3    14    RPD: 192	[NR]	[NR]
Fluoranthene	mg/kg	130980-5	0.9    44    RPD: 192	130980-2	94%
Pyrene	mg/kg	130980-5	0.9    42    RPD: 192	130980-2	99%
Benzo(a)anthracene	mg/kg	130980-5	0.4    18    RPD: 191	[NR]	[NR]
Chrysene	mg/kg	130980-5	0.4    14    RPD: 189	130980-2	88%
Benzo(b,j+k)fluoranthene	mg/kg	130980-5	0.5    15    RPD: 187	[NR]	[NR]
Benzo(a)pyrene	mg/kg	130980-5	0.3    14    RPD: 192	130980-2	87%
Indeno(1,2,3-c,d)pyrene	mg/kg	130980-5	0.2    6.2    RPD: 188	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	130980-5	<0.1    1.2	[NR]	[NR]

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Benzo(g,h,i)perylene	mg/kg	130980-5	0.2    4.6    RPD: 183	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	130980-5	95    104    RPD: 9	130980-2	101%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	130980-2	13/07/2015
Date analysed	-	[NT]	[NT]	130980-2	14/07/2015
HCB	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	[NT]	[NT]	130980-2	90%
gamma-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	[NT]	[NT]	130980-2	87%
Heptachlor	mg/kg	[NT]	[NT]	130980-2	98%
delta-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	130980-2	88%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	130980-2	90%
gamma-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	[NT]	[NT]	130980-2	88%
Dieldrin	mg/kg	[NT]	[NT]	130980-2	98%
Endrin	mg/kg	[NT]	[NT]	130980-2	98%
pp-DDD	mg/kg	[NT]	[NT]	130980-2	95%
Endosulfan II	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	[NT]	[NT]	130980-2	86%
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%	[NT]	[NT]	130980-2	88%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	130980-2	13/07/2015
Date analysed	-	[NT]	[NT]	130980-2	14/07/2015
Azinphos-methyl (Guthion)	mg/kg	[NT]	[NT]	130980-2	91%
Bromophos-ethyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos	mg/kg	[NT]	[NT]	130980-2	106%
Chlorpyrifos-methyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Diazinon	mg/kg	[NT]	[NT]	[NR]	[NR]
Dichlorvos	mg/kg	[NT]	[NT]	130980-2	123%
Dimethoate	mg/kg	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	[NT]	[NT]	130980-2	120%
Fenitrothion	mg/kg	[NT]	[NT]	130980-2	100%
Malathion	mg/kg	[NT]	[NT]	130980-2	85%
Parathion	mg/kg	[NT]	[NT]	130980-2	100%
Ronnel	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%	[NT]	[NT]	130980-2	74%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	130980-2	13/07/2015
Date analysed	-	[NT]	[NT]	130980-2	14/07/2015
Aroclor 1016	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1221	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1232	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1242	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1248	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1254	mg/kg	[NT]	[NT]	130980-2	117%
Aroclor 1260	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	130980-2	75%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	130980-2	13/07/2015
Date analysed	-	[NT]	[NT]	130980-2	13/07/2015
Arsenic	mg/kg	[NT]	[NT]	130980-2	101%
Cadmium	mg/kg	[NT]	[NT]	130980-2	103%
Chromium	mg/kg	[NT]	[NT]	130980-2	105%
Copper	mg/kg	[NT]	[NT]	130980-2	110%
Lead	mg/kg	[NT]	[NT]	130980-2	105%
Mercury	mg/kg	[NT]	[NT]	130980-2	91%
Nickel	mg/kg	[NT]	[NT]	130980-2	105%
Zinc	mg/kg	[NT]	[NT]	130980-2	108%



**Client Reference: 84944.00, Bellevue Hill**

QUALITYCONTROL Misc Soil - Inorg	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	130980-2	13/07/2015
Date analysed	-	[NT]	[NT]	130980-2	13/07/2015
Total Phenolics (as Phenol)	mg/kg	[NT]	[NT]	130980-2	107%
QUALITYCONTROL Misc Inorg - Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	130980-2	14/07/2015
Date analysed	-	[NT]	[NT]	130980-2	14/07/2015
pH 1:5 soil:water	pH Units	[NT]	[NT]	[NR]	[NR]
Electrical Conductivity 1:5 soil:water	µS/cm	[NT]	[NT]	[NR]	[NR]
Chloride, Cl 1:5 soil:water	mg/kg	[NT]	[NT]	130980-2	101%
Sulphate, SO4 1:5 soil:water	mg/kg	[NT]	[NT]	130980-2	103%

**Report Comments:**

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 130980-1 for As, Pb and Zn. Therefore a triplicate result has been issued as laboratory sample number 130980-11.

Asbestos: Excessive sample volume was provided for asbestos analysis. A portion of the supplied sample was sub-sampled according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g (50mL) of sample in its own container as per AS4964-2004.

Note: Samples 130980-1 to 8 were sub-sampled from bags and 130980-9 from jar provided by the client.

sTRH/PAH in soil: The RPD for duplicate results is accepted due to the non homogenous nature of the sample/s.

Asbestos ID was analysed by Approved Identifier: Paul Ching

Asbestos ID was authorised by Approved Signatory: Paul Ching

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.

## SAMPLE RECEIPT ADVICE

Client Details	
<b>Client</b>	Douglas Partners Pty Ltd
<b>Attention</b>	Peter Oitmaa

Sample Login Details	
<b>Your Reference</b>	84944.00, Bellevue Hill
<b>Envirolab Reference</b>	130980
<b>Date Sample Received</b>	10/07/2015
<b>Date Instructions Received</b>	10/07/2015
<b>Date Results Expected to be Reported</b>	17/07/2015

Sample Condition	
<b>Samples received in appropriate condition for analysis</b>	YES
<b>No. of Samples Provided</b>	10 Soils
<b>Turnaround Time Requested</b>	Standard
<b>Temperature on receipt (°C)</b>	4.0
<b>Cooling Method</b>	Ice Pack
<b>Sampling Date Provided</b>	YES

Comments
Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples

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@envirolabservices.com.au	Email: jhurst@envirolabservices.com.au

*Sample and Testing Details on following page*

Sample Id	Acid Extractable metals in soil	Asbestos ID - soils	Chloride, Cl 1:5 soil:water	Electrical Conductivity 1:5 soil:water	Organochlorine Pesticides in soil	Organophosphorus Pesticides	PAHs in Soil	PCBs in Soil	pH 1:5 soil:water	Sulphate, SO4 1:5 soil:water	svTRH (C10-C40) in Soil	Total Phenolics (as Phenol)	vTRH(C6-C10)/BTEXN in Soil
BH2-1.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH2-2.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH2-3.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH2-4.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH4-1.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH4-2.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH4-3.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH4-4.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH10-1.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH10-2.0	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Project Name: Belleve H.1/1  
 Project No: 84944-00  
 Project Mgr: Peter Oitmaa  
 Email: peter.oitmaa@douglaspartners.com.au  
 Date Required: Std.  
 Lab Quote No. ....

To: EnviroLab Services  
 12 Ashley Street, Chatswood NSW 2067  
 Attn: Tania Notaras  
 Phone: 02 9910 6200 Fax: 02 9910 6201  
 Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analytes							Notes		
						8 Heavy metals	TRH	PAH	OCF PCB OPP	Phenol	Asbestos	PH		CL <sup>-</sup> SO <sub>4</sub> <sup>2-</sup>	
BH2	1.0	1	7/7	S	Jar/Bag										
	2.0	2													
	3.0	3													
	4.0	4													
BH4	1.0	5	3/7												
	2.0	6													
	3.0	7													
	4.0	8													
BH16	1.0	9	6/7		Jar										
	2.0	10													

Lab Report No. ....

Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114  
 Relinquished by: P. Oitmaa Signed: Puo Date & Time: 10/7/15 12:00h  
 Relinquished by: Signed: Date & Time:

Received By: [Signature] Date & Time: 10/7/15 18:25

Phone: (02) 9809 0666  
 Fax: (02) 9809 4095

Date Received: 10/7/15  
 Time Received: 18:25  
 Received by: JYH  
 Temp: Cool/Ambient  
 Cooling: Ice/icepack  
 Security: Intact/Broken/None

Job No: 1309880  
 Date Received: 10/7/15  
 Time Received: 18:25  
 Received by: JYH  
 Temp: Cool/Ambient  
 Cooling: Ice/icepack  
 Security: Intact/Broken/None

EnviroLab Services  
 12 Ashley St  
 Chatswood NSW 2067  
 Ph: (02) 9910 6200