Douglas Partners
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Integrated Practical Solutions

Report on
Detailed Site Investigation

Former Oatley Bowling Club
River Road, Oatley NSW

Prepared for
Georges River Council

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

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Douglas Partners Pty Ltd
ABN 75 053 980 117
www.douglaspartners.com.au
96 Hermitage Road
West Ryde NSW 2114
PO Box 472
West Ryde NSW 1685
Phone (02) 9809 0666
Fax (02) 9809 4095

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1. Introduction

This report presents the results of a Detailed Site Investigation (DSI) for contamination undertaken at the site of the former Oatley Bowling Club, located at River Road, Oatley NSW. The investigation was commissioned in an email dated 5 September 2016 by Ms Claire Stuckey of Georges River Council (Council) and was undertaken in accordance with Douglas Partners' proposal SYD161073.P.001.Rev0.Oatley Intrusive Investigation, dated 1 September 2016.

It is understood that Council is seeking an amendment to the Hurstville Local Environmental Plan (LEP) 2012 to rezone the site to enable future development of seniors housing and public recreation space. Whilst precise details of such a future development are not known at this stage, the current concept incorporates a multi-level building for accommodation (in the north-eastern corner) with car parking and recreational space across the remainder of the site.

A preliminary site investigation (PSI) for contamination was previously completed for the site by Douglas Partners Pty Ltd (DP), and the report was updated in January 2016. The PSI was to be used as part of the application to re-zone the site from its former land use for potential use as an aged care facility. The PSI identified potential sources of contamination and therefore recommended an intrusive investigation to further assess these potential sources.

The objective of the current DSI is to address the potential sources of contamination identified in the PSI report, provide an assessment of the subsurface soil conditions, with respect to contamination, and to confirm the suitability (from a contamination standpoint) of the site for the proposed land use.

The DSI has been conducted in general accordance with the National Environment protection Council (NEPC) *National Environment Protection (Assessment of Site Contamination) Measure* 1999 (as amended 2013, NEPC 2013) and reported withy reference to the NSW Environment Protection Authority (EPA) *Guidelines for Consultants Reporting on Contaminated Sites* (reprinted August 2011).

2. Scope of Works

The scope of works for the DSI comprised the following:

- Review the PSI report to understand the potential contamination raised and to appropriately address the recommendations in the report;
- Conduct a *dial-before-you-dig* search and an electronic services scan to locate subsurface services and assets across the site prior to commencing fieldwork;
- A total of 22 sampling locations were positioned across the site. Fill and natural soil samples (where possible) were recovered from each sampling location at regular depth intervals. It is

noted that a total of 17 test pits were excavated to a maximum depth of 4.2 m below ground level (bgl) and six hand auger test bores were excavated to a maximum depth of 0.7 m bgl across the site. The six hand auger locations were conducted due to access constraints on the former bowling green on the north western portion of the site;

- Recovered fill samples were screened for volatiles using a photo-ionisation detector meter (PID) and potential indicators of contamination (e.g. staining) noted on the test pit and borehole logs;
- Selected soil samples (including quality assurance/ quality control [QA/QC] samples) were sent to a National Association of Testing Authorities (NATA) accredited laboratory for analysis of contaminants of potential concern as identified in the PSI report. These included heavy metals, polycyclic aromatic hydrocarbons (PAH), total recoverable hydrocarbons (TRH), monocyclic aromatic hydrocarbons (benzene, toluene, ethylbenzene, total xylene – BTEX), semi volatile and volatile organic compounds (SVOC/VOC), organochlorine / organophosphorous pesticides (OCP/OPP), total phenols, polychlorinated biphenyls (PCBs), asbestos, pH and cation exchange capacity (CEC);
- Analytical results were assessed against appropriate site assessment criteria (SAC) sourced primarily from NEPC (2013); and
- Provision of this DSI report outlining the field investigation, laboratory results and findings including recommendations (where appropriate).

3. Site Description

The site is currently legally described as Lots 14 to 20 Section 3 DP 7124, part of Lots 3 to 7 DP 7124, and part of Lot 1 DP1159269. The Lots comprising the majority of the site are shown on Drawing 1, Appendix A. It is understood that a subdivision application seeking to consolidate the site into a single lot was approved by Council on 8 September 2016 (the new lot number was not known at the time of preparing this report).

The site is located at the southern end of River Road, Oatley, is irregularly shaped (refer Drawing 1, Appendix A), with a total area of approximately 1.1 hectares (ha). The site is located within Georges River Council (formerly Hurstville City Council), the Parish of St George and County of Cumberland.

The site is bound by residential properties to the north, the Illawarra train line and Oatley Station to the east, and Myles Dunphy Bushland Reserve to the west and south.

A site inspection was conducted by an experienced Environmental Scientist from DP on the 12 September 2016. The following observations were made:

- Former buildings associated with the bowling club were long demolished. Little evidence of their presence was observed;
- An asphalt driveway ran from the end of River Road, adjacent to Myles Dunphy Reserve to the west of the bowling greens. A cyclone wire fence was present at the entrance to the site however access was still obtainable by foot. The bush track through Myles Dunphy Reserve and the Creek were evident from the site. This track is noted to be used by the public for recreational activities;

- The two bowling greens remained intact and were overgrown by weeds. The greens were supported by sandstone block retaining walls, some of which had been braced to maintain structural integrity. Evidence of electrical, irrigation and concrete blocks and metal frames associated with former structures were evident on both greens. Green metal sheds covered by graffiti remained on the north eastern corner of both greens;
- A concrete footpath ran along the perimeter of both greens at the southern end. Evidence of a driveway was present near the eastern boundary of the site;
- Some minor littering and waste was observed across the site; and
- Some trees and shrubs were noted to still remain in former landscaped areas which were overgrown and not maintained.

The site boundary, known lots, and features (as observed in plan) are shown on Drawing 1 in Appendix A. Photographs of the site are provided in Appendix B.

Further details on the features of the site (past and present) are listed in Section 5.

4. Geology, Topography and Hydrogeology

4.1 Geology and Topography

Reference to the Sydney 1:100,000 Geological Series Sheet indicates that the site is underlain by Triassic aged Hawkesbury Sandstone. The lithology is characterised by medium to coarse grained quartz sandstone, very minor shale and laminite lenses. Outcropping sandstone bedrock was observed to be present at the site. Previous on-site measurements showed rock bedding to dip 20^{o} to the south west.

The site has a stepped topography, largely formed by earthworks associated with the former bowling club over a moderate to steep sloping natural topography. Apart from the level platforms created at the northern end of the site (two bowling greens), the general slope of the site is to the south west towards the adjacent bushland.

The sub-surface profile encountered during the fieldwork associated with this DSI is described in Section 9.

4.2 Hydrogeology

Groundwater beneath the site is anticipated to flow in the same direction as the topography, which is to the south west towards bushland and Myles Dunphy Creek which leads to the Georges River. The creek runs in an approximately north-south direction.

A groundwater bore search was conducted in 2012 as part of the PSI and again as part of this DSI. Three bores were noted to be constructed within a 1 km radius of the site and identified as GW112819, GW112820 and GW112821. These bores were located approximately 750 m to the north east of the site beyond the Georges River College campus. The bore reports had no records

pertaining to the bore depths, lithology or water levels. These bores were constructed for monitoring purposes.

Two additional groundwater bores were identified within a 2 km radius of the site. The one identified as GW108996 was located within Hurstville Golf Club to the north east, drilled to a depth of 50 m with the standing water level in fractured sandstone at a depth of about 21 m. The other bore is identified as GW105604, a domestic bore to the south east of the site near Donnelly Park. No records were included on the bore sheet.

Groundwater bore details are provided in Appendix F.

4.3 Acid Sulphate Soil

A review of acid sulphate soil risk maps indicated that the site is not in a known area of acid sulphate soil. Areas to the south west and to the south east are, however, are identified to have a high probability of acid sulphate soil. These areas are associated with the Georges River, as well as Oatley Bay to the south east approximately 1 km away.

5. Previous Reports

5.1 Preliminary Contamination Assessment (DP 2006)

DP previously conducted a Phase 1 contamination assessment for the site. The report was titled *Report on Preliminary Contamination Assessment, Oatley Bowling Club, Oatley.* December 2006 (Reference 44456A; DP, 2006). The assessment was conducted as part of a feasibility study for the proposed development of an aged care facility.

The desktop review identified that the site was owned by private individuals from as early as 1914 up until around 1948. It was then acquired by Hurstville City Council. A review of historic aerial photographs and Council records indicated that the site remained mainly vacant/ covered by bushland between 1930 and 1960, after which the site was developed into a bowling club.

At the time of the 2006 assessment the site was unoccupied. A single storey brick club building with a garage below was located on the central eastern side of the site. Two bowling greens were located on the northern section, a timber and metal shed located opposite the club on the western side of the site and a large open area in the southern portion, possibly used for car parking.

The bowling greens located on the northern portion of the site were elevated above the natural level of the area and down the slope with a difference in levels approximately 3 m to 4 m between the greens. The greens were supported by sandstone block retaining walls. It was considered likely at the time that imported fill material was used to form the Bowling Green and the car park in the southern portion of the site. Fill material along the embankment in the south eastern portion of the site comprised building rubble including bricks, scrap metal, plastic, concrete and fibre cement (which may contain asbestos). In addition, it was noted that the site is located adjacent to the railway line and it was considered possible that fill associated with the railway line, such as ash and charcoal may have been used at the site.

On the basis of the site history / information available, the potential for contamination at the site was considered to be low to moderate. The main issues identified to be of potential concern were:-

- Potential application of pesticides and herbicides on the bowling greens;
- Application of the uncontrolled fill to form / level the site, especially the bowling greens; and
- Potential presence of hazardous building material in the club building associated with structures.

The DP (2006) report recommended that subsurface sampling be conducted as part of the proposed development to ascertain the nature, with respect to contamination, of fill and natural material at the site. A waste classification in accordance with NSW EPA Waste Classification guidelines was also recommended for any material that was to be removed from site.

Based on the findings it was considered that the site may be made suitable for the proposed development.

5.2 Updated Contamination Assessment (DP 2012)

In 2012, DP updated the 2006 report. The report was entitled *Update of Phase 1 Contamination Assessment Report, Former Oatley Bowling Club, Oatley.* December 2012 (DP 2012). The assessment was used as part of the application to rezone the site from recreational land use (its former use as a bowling club) to residential land use (its proposed use as an aged care facility).

During the site walkover in December 2012 similar features were observed to those in 2006. Several additional potential sources of contamination were also identified. Collectively, the potential sources of contamination were identified as:

- Potential application of pesticides and herbicides on the bowling greens;
- Potential PCBs associated with the electrical box identified on the upper bowling green;
- Application of uncontrolled fill to form/ level the site, especially the bowling greens;
- Potential presence of hazardous building material remaining after the demolition of the former bowling club building; and
- Contamination associated with fly tipping and the small fill stockpiles present at the site.

As in 2006, no intrusive investigation was conducted as part of the assessment. Therefore no detailed comments could be made in regard to the levels of subsurface contamination. It was again recommended that subsurface sampling be undertaken as part of the proposed development to verify the nature, with respect to contamination, of the fill and natural material on the site. A waste classification in accordance with NSW EPA waste classification guidelines was also recommended for any material that would be removed from the site.

Based on the information obtained from DP (2006) and the updated DP (2012) reports it was considered that the site was suitable for the proposed re-zoning and that the site could be made suitable for an aged care facility following intrusive investigations to assess the identified contaminants of potential concern.

5.3 Updated Contamination Assessment (DP 2016)

In January 2016 DP again updated the DP (2012) report, with the updated report titled *Report on Updated Preliminary Site Investigation, Former Oatley Bowling Club, River Road, Oatley.* January 2016 (Reference 73308.01; DP, 2016). The report reviewed the previous assessments and added the following updated information:

- A search of the NSW EPA contaminated land public register was conducted which revealed that no notices were issued under the *Contaminated Land Management Act* 1997 for the site;
- A search was conducted for licenses issued under the *Protection of the Environment Operations Act* 1997. It was found that no notices existed for the subject site. One notice was issued for a site in Oatley to AUSGRID (Notice No 1071536) in Judd Street, however due to the proximity of the site and it being hydraulically up gradient from the subject site the AUSGRID site was considered unlikely to impact on groundwater quality beneath the site;
- A search of the NSW Office of Water groundwater bore database was conducted to obtain any updated information; and
- A review was conducted of aerial photographs to identify any possible changes to the site since the 2012 review. The 2012 Nearmap image showed no buildings were present on the site and the former bowling greens were covered by grass. The site was predominantly surrounded by bushland from Myles Dunphy Reserve on the south western boundary and residential properties to the north of the site.

The findings reported in DP (2016) were consistent with those in DP (2012), with the recommendations provided in previous reports remaining unchanged.

6. Preliminary Conceptual Site Model

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

6.1 Potential Contamination Sources and Contaminants of Concern

Based on the site features identified during the previous investigations between 2006 and 2012, the following potential sources of contamination and contaminants of potential concern have been identified for the site.

Table 1: Potential Contamination Sources and Contaminants of Concern

Potential Source	Description of Potential Contaminating Activity	Contaminants of Concern
Pesticides and Herbicides	Use of chemicals on bowling greens on the northern portion of the site. Potentially also used in former landscaped areas.	OCP, OPP, heavy metals (arsenic)
Electrical boxes on site	Former electrical boxes and boards located on the greens	PCBs, asbestos associated with backing boards
Imported Fill	Fill used across the site for levelling purposes	Heavy metals (including manganese), TRH, BTEX, PAH, SVOC and VOC (including creosote), PCB, OCP, OPP, phenols, asbestos
Hazardous building material	Use of fibre cement material in former buildings, potentially asbestos containing material (ACM), lead and PCB. Potential asbestos (brake lining) associated with the nearby rail line.	Asbestos, lead, PCB
Fly tipping and stockpiles	Uncontrolled dumping of rubbish and material across the site	Heavy metals (including manganese), TRH, BTEX, PAH, SVOC and VOC (including creosote), PCB, OCP, OPP, phenols, asbestos

The potential contamination sources (S) on the site are represented as follows:

S1 Pesticides and herbicides

S2 Electrical boxes

S3 Imported fill

S4 Hazardous building material

S5 Fly tipping and stockpiles

6.2 Potential Receptors

6.2.1 Human Health Receptors

R1 Current site users (recreational users/ the public)

R2 Construction and maintenance workers

R3 Final end users (residential – aged care)

R4 Land users in adjacent areas (recreational, residential)

6.2.2 Environmental Receptors

R5 Groundwater

R6 Surface water (Myles Dunphy Creek leading into the Georges River)

R7 Ecology (Myles Dunphy Reserve)

6.2.3 Potential Pathways

Potential pathways for contamination to impact the identified receptors include the following:

P1 Direct contact with soil or groundwater (ingestion and dermal)

P2 Inhalation of dust and/or vapours

P3 Leaching of contaminants and vertical migration into groundwater

P4 Surface water run-off

P5 Lateral migration of groundwater

6.3 Preliminary Conceptual Site Model

A 'source – pathway – receptor' approach has been used to assess the potential risk of harm being caused to human, water or environmental receptors from contamination sources on or in the vicinity of the site, via exposure pathways. The possible pathways between the above sources S1 to S5) and receptors (R1 to R7) are provided in Table 2 below.

Table 2: Preliminary Conceptual Site Model

Potential Source	Pathway	Receptor
S1 – Pesticides and Herbicides	P1 – Direct contact	R1 – current site users R2 – construction and maintenance workers R3 – final end users R6 – surface water R7 – ecology
	P2 – Inhalation	R1 – current site users R2 – construction and maintenance workers R3 – final end users R4 – land users in adjacent areas
	P3 – leaching	R5 – groundwater R7 – ecology
S2 – Electrical Boxes	P1 – Direct contact	R1 – current site users R2 – construction and maintenance workers R3 – final end users
S3 – Imported Fill	P1 – Direct contact	R1 – current site users R2 – construction and maintenance workers R3 – final end users R6 – surface water R7 – ecology
	P2 – Inhalation	R1 – current site users R2 – construction and maintenance workers R3 – final end users R4 – land users in adjacent areas
	P3 – leaching	R5 – groundwater R7 – ecology
S4 – hazardous building material	P1 – Direct contact	R1 – current site users R2 – construction and maintenance workers R3 – final end users
	P2 – Inhalation	R1 – current site users R2 – construction and maintenance workers R3 – final end users

Potential Source	Pathway	Receptor
		R4 – land users in adjacent areas
S5 – Fly tipping and stockpiles	P1 – Direct contact	R1 – current site users R2 – construction and maintenance workers R3 – final end users R6 – surface water R7 – ecology
	P2 – Inhalation	R1 – current site users R2 – construction and maintenance workers R3 – final end users R4 – land users in adjacent areas
	P3 – leaching	R5 – groundwater R7 – ecology
	P4 – Surface water run-off	R4 – land users in adjacent areas R5 – groundwater R7 – ecology

7. Fieldwork and Analysis

7.1 Data Quality Objectives and Project Quality Procedures

This DSI has been conducted in general accordance with the seven step data quality objective process which is provided in Appendix B, Schedule B2 of National Environment Protection Council (NEPC) *National Environment Protection Measure (Assessment of Site Contamination*) 1999, as amended 2013 (NEPC 2013). The DQO process is as follows:

- State the problem;
- Identify the decision;
- Identify inputs into the decision;
- Define the boundary of the assessment;
- Develop a decision rule;
- Specify acceptable limits on decision errors; and
- Optimise the design for obtaining data.

Referenced sections for the respective DQOs listed above are provided in Appendix C.

7.2 Data Quality Indicators

The performance of the assessment in achieving the DQO was assessed through the application of data quality indicators (DQI) as defined by:

Precision: A quantitative measure of the variability (reproducibility) of data

Accuracy: A quantitative measure of the closeness of reported data to the "true" value

Representativeness: The confidence (expressed qualitatively) that data are representative of each media present on the site

Completeness: A measure of the useable data from a data collection activity

Comparability: The confidence (expressed qualitatively) that data can be considered equivalent for each sampling and analytical event.

Further comments on the DQIs are presented in Appendix C.

7.3 Soil Sampling Locations and Rationale

A total of 23 test bores were excavated/hand augered across the site to a maximum depth of 4.2 m bgl. These test locations were conducted to provide an indication of below ground conditions and to enable soil sampling for chemical testing. The site area is approximately 1.1 hectares. Under the NSW EPA *Sampling Design Guidelines* 1997, a minimum of 22 test locations is recommended to characterise a site of this site. The sampling density adopted for this investigation is therefore considered suitable.

Intrusive works were conducted on 13 and 14 September 2016. Sampling location TP1 to TP16 (inclusive) were excavated using a 5.5 tonne excavator. Sampling locations BH17 to BH22 were conducted using a hand auger until refusal. The excavator could not be used at these locations due to access constraints. Soil samples were collected from these locations at regular depth intervals. Locations are shown on Drawing 2, Appendix A.

7.4 Soil Sampling Procedures

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

- Samples were collected using disposable sampling equipment including dedicated nitrile gloves for each sample;
- Transfer of samples into laboratory prepared glass jars and capping immediately with Teflon lined lids;

- Labelling of sampling containers with individual and unique identification, including project number, sample identification and sample depth; and
- Placement of sample containers and bags into a cooled, insulated and sealed container for transport to the laboratory.

Envirolab Services Pty Ltd, accredited by NATA was employed to conduct the sample analysis. Envirolab laboratory is required to carry out in-house QA/QC procedures.

7.5 Analytical Rationale

The analytical scheme was designed to obtain an indication of the potential presence and possible distribution of identified COPC based on information obtained during the previous investigations and the CSM devised for past and present activities and features within the site. The primary contaminants of concern as identified in section 6.1 are heavy metals, TRH, BTEX, PAH, SVOC and VOC (including creosote), OCP/OPP, PCB, phenols and asbestos. Soil samples were selected for analysis based on site observations (i.e. odour, staining etc.), and their location within the subsoil strata (i.e. fill or natural), with an emphasis on fill and near surface samples where it would be expected that the bulk of the COPC would be present.

7.6 Field Quality Assurance and Quality Control

The field QC procedures for sampling were as prescribed in Douglas Partners' *Field Procedures Manual*, and are outlined in Appendix C.

Field replicates were recovered and analysed for a limited suite of contaminants by means of intra-laboratory analysis. These samples were collected in accordance with standard industry practice and guidelines.

7.7 Laboratory QA/QC

The analytical laboratories, accredited by NATA, are required to conduct in-house QA/QC procedures. These are normally incorporated into every analytical run and include reagent blanks, spike recovery, surrogate recovery and duplicate samples. These results are included in the laboratory certificates in Appendix E.

The results of the DP assessment of laboratory QA/QC are shown on Appendix C, with the full laboratory certificates of analysis included in Appendix E.

8. Assessment Criteria

The site assessment criteria (SAC) have been sourced from NEPC (2013) and comprise health and ecological risk based investigation and screening levels, and management limits for TRH. The laboratory Practical Quantitation Limit (PQL) has also been adopted as a screening level for some contaminants.

8.1 Health-based Investigation Levels (Non-petroleum Chemical Contaminants)

Table 3 shows the health based investigation levels (HILs) that have been adopted by NEPC (2013) Schedule B1, Table 1A (1) for assessing the generic human health risk from a contaminant via relevant pathways of exposure, as detailed in the CSM. Table 3 only includes contaminants analysed during this assessment, not the full list provided in NEPC (2013).

The proposed development is to be residential (aged care) facilities and public recreation. Hence the adopted SAC were for residential land use with accessible soils (HIL A) and recreational (HIL C).

Table 3: Health Investigation Levels (Non-petroleum Chemical Contaminants)

Contaminant	HIL A – Residential (mg/kg)	HIL C – Recreational (mg/kg)
Metals and Inorganics		
Arsenic	100	300
Cadmium	20	90
Chromium (VI)	100	300
Copper	6,000	17,000
Lead	300	600
Manganese	3,800	19,000
Mercury (inorganic)	40	80
Nickel	400	1,200
Zinc	7,400	30,000
PAH		
Carcinogenic PAH (as benzo(a)pyrene TEQ)	3	3
Total PAH	300	300
Phenols		
Phenol	3,000	40,000
OCP		
DDT + DDD + DDE	240	400
Aldrin + Dieldrin	6	10
Chlordane	50	70
Endosulfan (total)	270	340
Endrin	10	20
Heptachlor	6	10

Contaminant	HIL A – Residential (mg/kg)	HIL C – Recreational (mg/kg)
HCB	10	10
Methoxychlor	300	400
Other Pesticides		
Chlorpyrifos	160	250
Other Organics		
PCB	1	1

8.2 Petroleum Contaminants (Health Screening Levels and Management Limits)

8.2.1 Health Screening Levels – Vapour Intrusion Pathway

Table 4 shows petroleum hydrocarbon compounds adopted from NEPC (2013) Schedule B1, Table 1A (3) and are based on the exposure to petroleum hydrocarbons through the dominant vapour inhalation exposure pathway. The screening levels are adopted given the exposure risk identified during the CSM. Based on the continued site use, the relevant and adopted HSL are HSL A and HSL C.

The HSLs are based on overlying soil type and depth. HSLs for sand have been used based on the sandy gravelly fill material encountered at the site. Given the general depth of fill encountered during the intrusive works, and using conservative values, the depth range of 0 m to <1 m has been used.

Table 4: Soil Health Screening Levels for Vapour Intrusion (mg/kg)

Contaminant	HSL A Residential	HSL C Recreational
	Depth 0 m to 1 m	Depth 0 m to 1 m
Toluene	160	NL
Ethylbenzene	57	NL
Xylenes	40	NL
Naphthalene	3	NL
Benzene	0.5	NL
TRH C6-C10 less BTEX [F1]	44	NL
TRH >C10-C16 less naphthalene [F2]	110	NL

Note:- NL “not limiting”

8.2.2 Health Screening Levels – Direct Contact Pathway

Table 4 shows petroleum hydrocarbon compounds adopted from NEPC (2013) Schedule B1, Table 1A (3) and are based on the exposure to petroleum hydrocarbons through the direct contact pathway. These values have been considered to assess potential exposure risk during construction and future maintenance operations, where the vapour intrusion pathway may not apply. These values are taken from the Co-operative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) Technical Report No. 10.

Table 5: Direct Contact Health Screening Levels

Contaminant	HSL A Residential	HSL C Recreational	Intrusive Maintenance Worker
Toluene	14,000	18,000	120,000
Ethylbenzene	4,500	5,300	85,000
Xylenes	12,000	15,000	130,000
Napthalene	1,400	1,900	29,000
Benzene	100	120	1,100
C_6-C_{10}	4,400	5,100	82,000
>C_{10}-C_{16}	3,300	3,800	62,000
>C_{16}-C_{34}	4,500	5,300	85,000
>C_{34}-C_{40}	6,300	7,400	120,000

8.2.3 Management Limits (TRH Only)

NEPC (2013) Table 1B (7) provides 'management limits' for TRH fractions, which are applied after consideration of relevant HSLs. The management limits have been adopted to avoid or minimise the following potential effects of petroleum hydrocarbons:

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

The presence of site TRH contamination at the levels of management limits does not imply that there is no need for administrative notification or controls in accordance with jurisdictional requirements. The adopted management limits are shown in Table 6 and have been selected based on the CSM.

Management limits for coarse material are presented in Table 6, since fill across the site comprised of sandy gravelly material, which was noted in the samples collected. Coarse texture management limits are also more conservative of the management limits available.

Table 6: Management Limits for TRH Fractions in Soil

TRH Fraction	Management Limit: Residential / Recreational (mg/kg)
C_6-C_9 [F1]	700
>C_{10}-C_{16} [F2]	1,000
>C_{16}-C_{34} [F3]	2,500
>C_{34}-C_{40} [F4]	10,000

8.3 Ecological Investigation Levels

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

The EIL is calculated using the following formula:

EIL = ABC + ACL

The ABC is determined through direct measurement at an appropriate reference site (preferred) or through the use of methods defined by Olszowy et al *Trace element concentrations in soils from rural and urban areas of Australia,* Contaminated Sites monograph no. 4, South Australian Health Commission, Adelaide, Australia 1995 (Olszowy, 1995) or Hamon et al, *Geochemical indices allow estimation of heavy metal background concentrations in soils*, Global Biogeochemical Cycles, vol. 18, GB1014, (Hamon, 2014). ACL is based on the soil characteristics of pH, CEC and clay content.

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

The adopted EIL, derived from Tables 1B (1) to 1B (5), Schedule B1 of NEPC (2013) the *Interactive (Excel) Calculation Spreadsheet* are shown in the following Table 7. The following specific data and assumptions have been used to determine the EILs:

- The EILs will apply to the top 2 m of the soil profile;
- Given the likely source of soil contaminants (i.e. historical site use/fill) the contamination is considered as “aged” (>2 years);
- ABCs have been derived using the *Interactive (Excel) Calculation Spreadsheet* using input parameters of aged soil, based on CEC of 4.6 and a pH of 7.8 (average site values) for the state in which the site is located, and for high traffic volumes.

Table 7: Ecological Investigation Levels (EIL) in mg/kg

Analyte		EIL	Comments
Metals	Arsenic	100	Adopted pH of 7.8 and CEC of 4.6 $cmol_c/kg$
	Copper	100	
	Nickel	30	
	Chromium III	410	
	Lead	1100	
	Zinc	290	
PAH	Naphthalene	170	
OCP	DDT	180	

8.4 Ecological Screening Levels – Petroleum Hydrocarbons

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

ESL have been derived in NEPC (2013) for petroleum fractions F1 to F4 as well as BTEX and benzo(a)pyrene. Site specific data and assumptions as summarised in Table 8 have been used to determine the ESL. The adopted ESL, from Table 1B(6), Schedule B1 of NEPC (2013) are shown in Table 9.

Table 8: Inputs to the Derivation of ESL

Variable	Input	Rationale
Depth of ESL application	Top 2m of the soil profile	The top 2m depth below ground level corresponds to the root zone and habitation zone of many species.
Land use	Residential / Recreational	Proposed residential land use (aged care facility) and public recreation.
Soil Texture	Coarse	

Table 9: Ecological Screening Levels (ESL) in mg/kg

Analyte		ESL	Comments
TRH	C_6-C_{10} (less BTEX) [F1]	180*	All ESLs are low reliability apart from those marked with * which are moderate reliability
	>C_{10}-C_{16} (less naphthalene) [F2]	120*	
	>C_{16}-C_{34} [F3]	300	
	>C_{34}-C_{40} [F4]	2800	
BTEX	Benzene	50	
	Toluene	85	
	Ethylbenzene	70	
	Xylenes	105	
PAH	Benzo(a)pyrene	0.7	

8.5 Asbestos

Presence/absence testing for asbestos has been conducted as a screening assessment. If further asbestos or indicators of asbestos (e.g. significant inclusions of building debris) are observed, further assessment of asbestos in accordance with NEPC (2013) may be recommended.

8.6 Contaminants with No Assessment Criteria

Where no guidance is provided in NEPC (2013) for a specific analyte, the PQL was used as the initial screening criteria.

If concentrations are recorded above the PQL, reference criteria will be sourced from other national and international guidance as relevant and used to determine the significance of the detected analyte.

The referenced criteria are provided in the results summary tables (Section 10, Analytical Results).

9. Fieldwork Observations

9.1 Soil

The borehole and test pit logs applicable to this DSI are provided in Appendix D. Based on the logs for the test locations, the subsoil can be broadly defined as follows:

FILL Fill across the site can be generally separated into two portions:

The northern portion, generally beneath the former bowling greens, comprised largely of grey and brown clayey sand and sand with some sandstone gravels and boulders, to depths of up to 2.2 m bgl;

The southern portion comprised largely of brown, yellow brown or grey clayey sand / sandy clay fill, with various proportions of shale, sandstone gravel, rootlets, charcoal, asphalt, brick fragment, timber pieces, tile fragments and concrete fragments, to depths of up to 4.2 m bgl. Fibre cement material was identified in six of the test pits; underlain by;

SANDSTONE All test locations were excavated until refusal on sandstone, which is presumed to be naturally occurring.

Several fibre cement material fragments potentially containing asbestos were observed in the fill at locations TP9, TP10, TP11, TP12, TP14, and TP16, at various depths. Asbestos was confirmed in all eight fibre cement material fragments analysed (refer to Sections 10 and 11).

All PID readings were less than 4 ppm, as shown on the borehole and test pit logs.

The deepest fill was reported in the southern section of the site (TP11). The fill also appeared to be uncontrolled.

10. Analytical Results

The results of the laboratory analysis are presented in Table 10. The full NATA laboratory reports together with the chain-of-custody and sample receipt information are presented in Appendix E.

			BTEX							Lead	Metals									OCP/OPP									
			Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Xylene Total	C6-C10 less BTEX (F1)	Lead	Arsenic	Cadmium	Chromium (III+VI)	Copper	Manganese	Mercury	Nickel	Zinc	Aldrin + Dieldrin	DDT+DDE+DDD	Endrin	Endosulfan (total)	Heptachlor	HCB	Methoxychlor	Chlordane	Chlorpyrifos
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PQL			0.2	1	0.5	2	1		25	1	4	0.4	1	1		0.1	1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPC (2013) HILs Residential A Soil										300	100	20	100	6000	3800	40	400	7400	6	240	10	270	6	10	300	50	160
NEPC (2013) HILs Recreational C Soil										600	300	90	300	17,000	19,000	80	1200	30,000	10	400	20	340	10	10	400	70	250
NEPC (2013) Residential A Soil HSL for Vapour Intrusion, Sand 0-1m			0.5	55	160			40	45																		
NEPC (2013) Recreational C Soil HSL for Vapour Intrusion, Sand 0-1m			NL	NL	NL			NL	NL																		
CRC CARE (2011) Direct Contact HSL A Residential			100	4500	14,000			12,000																			
CRC CARE (2011) Direct Contact HSL C Recreational			120	5300	18,000			15,000																			
CRC CARE (2011) Direct Contact HSL Intrusive Maintenance Worker			1100	85,000	120,000			130,000																			
NEPC (2013) Table 1B(6) Management Limits Residential / Recreational									700																		
NEPC (2013) EILs - Residential / Rectrational[a]										1100	100		410	100			30	290		180							
NEPC (2013) ESLs - Residential / Recreational (Coarse)			50	70	85			105																			
Test Bore Location	**Sample Depth**	**Sample Date**																									
TP1	0.4-0.5	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	4	<4	<0.4	5	3	4	<0.1	<1	6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP2	0.4-0.5	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	4	5	<0.4	5	3	7	<0.1	<1	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP3	0.0-0.2	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	7	<4	<0.4	9	7	120	0.6	2	12	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP3	0.5-0.6	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	7	7	<0.4	7	4	58	<0.1	3	16	-	-	-	-	-	-	-	-	-
TP4	0.7-0.8	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	5	<4	<0.4	8	4	47	0.2	4	14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP5	0.0-0.2	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	9	<4	<0.4	18	9	200	1.3	4	19	-	-	-	-	-	-	-	-	-
TP5	0.4-0.5	13/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP5	1.9-2.0	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	4	<4	<0.4	5	4	16	<0.1	<1	7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP6	0.0-0.2	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	2	<4	<0.4	3	3	30	0.2	<1	3	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP7A	0.0-0.2	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	6	<4	<0.4	7	10	730	<0.1	6	44	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP8B	0.9-1.0	13/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP8B	1.4-1.5	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	4	<4	<0.4	2	3	8	<0.1	<1	4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP9	0.4-0.5	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	57	12	<0.4	17	10	34	<0.1	3	79	-	-	-	-	-	-	-	-	-
TP9	1.4-1.5	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	68	10	<0.4	10	16	41	<0.1	2	70	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP9	2.4-2.5	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	11	<4	<0.4	3	12	36	<0.1	<1	10	-	-	-	-	-	-	-	-	-
TP10	0.9-1.0	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	22	5	<0.4	13	3	16	<0.1	<1	27	-	-	-	-	-	-	-	-	-
TP10	1.4-1.5	13/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP10	2.4-2.5	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	20	<4	<0.4	13	3	26	<0.1	1	26	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP10	3.4-3.5	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	30	<4	<0.4	9	8	43	<0.1	3	30	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP11	0.4-0.5	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	16	<4	<0.4	10	**210**	9	<0.1	2	84	-	-	-	-	-	-	-	-	-
TP11	1.4-1.5	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	39	<4	<0.4	7	6	70	<0.1	2	28	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP11	3.4-3.5	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	19	16	<0.4	12	5	34	<0.1	3	26	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP12	0.4-0.5	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	35	5	<0.4	13	14	78	<0.1	10	24	-	-	-	-	-	-	-	-	-
TP12	0.9-1.0	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	27	5	<0.4	10	6	22	0.2	1	62	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP12	2.9-3.0	13/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	27	16	<0.4	16	5	40	<0.1	3	36	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP13	0.0-0.2	14/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	17	5	<0.4	15	3	13	<0.1	<1	14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP14	0.4-0.5	14/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	**630**	5	<0.4	8	29	38	<0.1	3	110	-	-	-	-	-	-	-	-	-
TP14	1.9-2.0	14/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	**820**	22	<0.4	18	28	130	<0.1	5	170	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP14	2.9-3.0	14/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	5	17	<0.4	33	<1	3	<0.1	<1	9	-	-	-	-	-	-	-	-	-
TP15	0.6-0.7	14/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	5	<4	<0.4	5	10	94	<0.1	3	23	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP16	0.4-0.5	14/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	53	13	<0.4	18	6	23	<0.1	1	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH17	0.4-0.5	14/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	2	<4	<0.4	2	3	41	0.1	<1	5	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH18	0.4-0.5	14/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	3	<4	<0.4	4	1	18	<0.1	1	5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH19	0.0-0.2	14/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	9	<4	<0.4	12	7	250	0.8	5	20	-	-	-	-	-	-	-	-	-
BH19	0.55-0.65	14/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	7	5	<0.4	20	1	9	<0.1	1	28	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH20	0.0-0.2	14/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	9	<4	<0.4	10	7	340	0.4	6	26	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1
BH21	0.4-0.5	14/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	2	<4	<0.4	2	<1	16	<0.1	<1	5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH22	0.0-0.2	14/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	8	<4	<0.4	12	6	290	0.5	5	19	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BD3/130916	-	14/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	15	5	<0.4	14	8	12	<0.1	1	14	-	-	-	-	-	-	-	-	-
BD4	-	14/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	30	7	<0.4	9	8	33	<0.1	2	19	-	-	-	-	-	-	-	-	-
BD5	-	14/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	31	<4	<0.4	8	5	110	<0.1	3	33	-	-	-	-	-	-	-	-	-
BD6	-	14/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	<25	92	10	<0.4	13	13	37	<0.1	3	86	-	-	-	-	-	-	-	-	-
Spike	-	14/09/2016	97%	97%	97%	98%	98%	<PQL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blank	-	14/09/2016	<0.2	<1	<0.5	<2	<1	<PQL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asb 1 (TP9/1.4m)	-	13/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asb 2 (TP10/1.5m)	-	14/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asb 3 (TP10/2.8m)	-	14/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asb 4 (TP11/2m)	-	14/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asb 5 (TP11/2.9m)	-	14/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asb 6 (TP12/1.4m)	-	14/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asb 7 (TP12/2.8m)	-	14/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asb 8 (TP14/1.5m)	-	14/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

BTEX	Benzene, Toluene, Ethylbenzene and Xylene	PAH	Polycyclic Aromatic Hydrocarbon
CRC CARE	Cooperative Research Centre for Contamination Assessment and Remediation of the Environment		
HIL	Health Investigation Level	PQL	Practical Quantiation Limit
HSL	Health Screening Level	TEQ	Toxicity Equivalence Quotient
NAD	No Asbestos Detected at Reporting Limit of 0.1g/kg	TRH	Total Recoverable Hydrocarbon
NEPC (2013)	National Environmental Protection Measure 1999 as amended (2013)	VOC	Volatile Organic Compounds
OCP/OPP	Organochlorine Pesticides/Organophosphorus Pesticides	EIL	Environmental Investigation Level
PCB	Polychlorinated Biphenyls	ESL	Environmental Screening Level

Exceeds HIL/HSL
Exceeds EIL/ESL
- Not Analysed/Not Applicable/Not Available
a Based on CEC of 2.5 meq/100g, pH 9.0
* Tetrachloroethene (PCE)
Asbestos detected in material sample

			PAH					PCB	TPH										Asbestos in Soil	Asbestos in Material	VOC	SVOC	pH	CEC
			Benzo(a) pyrene	Benzo(a) pyrene TEQ	Naphthalene	PAHs (Sum of total)	Phenolics Total		C10-C16	C16-C34	C34-C40	F2-NAPHTHALENE	C6 - C9	C10 - C14	C15 - C28	C29-C36	>C10 - C36 (Sum of total)	C6-C10						
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-		mg/kg	mg/kg	pH Units	meq/100g
PQL			0.05	0.05	0.1		5	0.1	50	100	100	50	25	50	100	100	250	25	NAD		-			
NEPC (2013) HILs Residential A Soil				3		300	3000	1																
NEPC (2013) HILs Recreational C Soil				3		300	40,000	1																
NEPC (2013) Residential A Soil HSL for Vapour Intrusion, Sand 0-1m					3																			
NEPC (2013) Recreational C Soil HSL for Vapour Intrusion, Sand 0-1m					NL																			
CRC CARE (2011) Direct Contact HSL A Residential					1400				3300	4500	6300							4400						
CRC CARE (2011) Direct Contact HSL C Recreational					1900				3800	5300	7400							4400						
CRC CARE (2011) Direct Contact HSL Intrusive Maintenance Worker					29,000				62,000	85,000	120,000							180,000						
NEPC (2013) Table 1B(6) Management Limits Residential / Recreational									1000	2500	10,000													
NEPC (2013) EILs - Residential / Rectrational[2]					170																			
NEPC (2013) ESLs - Residential / Recreational (Coarse)			0.7						120	300	2800							180						
Test Bore Location	**Sample Depth**	**Sample Date**																						
TP1	0.4-0.5	13/09/2016	<0.05	<0.5	<0.5	<PQL	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	<PQL	<PQL	-	-
TP2	0.4-0.5	13/09/2016	<0.05	<0.5	<0.5	<PQL	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	<PQL	<PQL	-	-
TP3	0.0-0.2	13/09/2016	<0.05	<0.5	<0.5	<PQL	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
TP3	0.5-0.6	13/09/2016	<0.05	<0.5	<0.5	<PQL	-	-	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	<PQL	<PQL	-	-
TP4	0.7-0.8	13/09/2016	<0.05	<0.5	<0.5	<PQL	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
TP5	0.0-0.2	13/09/2016	<0.05	<0.5	<0.5	<PQL	-	-	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
TP5	0.4-0.5	13/09/2016	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<PQL	-	-	-
TP5	1.9-2.0	13/09/2016	<0.05	<0.5	<0.5	<PQL	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
TP6	0.0-0.2	13/09/2016	<0.05	<0.5	<0.5	<PQL	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
TP7A	0.0-0.2	13/09/2016	<0.05	<0.5	<0.5	<PQL	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
TP8B	0.9-1.0	13/09/2016	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<PQL	<PQL	-	-
TP8B	1.4-1.5	13/09/2016	<0.05	<0.5	<0.5	<PQL	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
TP9	0.4-0.5	13/09/2016	0.08	<0.5	<0.5	0.44	-	-	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
TP9	1.4-1.5	13/09/2016	**0.83**	1.2	1.2	6.3	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	<PQL	**6.1**	9.2	9.6
TP9	2.4-2.5	13/09/2016	<0.05	<0.5	<0.5	<PQL	-	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
TP10	0.9-1.0	13/09/2016	0.2	<0.5	<0.5	2.3	-	-	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
TP10	1.4-1.5	13/09/2016	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<PQL	<PQL	-	-
TP10	2.4-2.5	13/09/2016	<0.05	<0.5	<0.5	<PQL	<5	-	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	<PQL	<PQL	8.3	20
TP10	3.4-3.5	13/09/2016	0.06	<0.5	<0.5	0.16	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
TP11	0.4-0.5	13/09/2016	<0.05	<0.5	<0.5	<PQL	-	-	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	**NAD**	-	-	-	7.8	4.6
TP11	1.4-1.5	13/09/2016	0.06	<0.5	<0.5	0.06	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
TP11	3.4-3.5	13/09/2016	0.4	0.5	0.5	4.6	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	<PQL	**2**	-	-
TP12	0.4-0.5	13/09/2016	<0.05	<0.5	<0.5	<PQL	-	-	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	8.3	12
TP12	0.9-1.0	13/09/2016	<0.05	<0.5	<0.5	<PQL	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	<PQL	<PQL	-	-
TP12	2.9-3.0	13/09/2016	<0.05	<0.5	<0.5	0.22	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
TP13	0.0-0.2	14/09/2016	<0.05	<0.5	<0.5	<PQL	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
TP14	0.4-0.5	14/09/2016	<0.05	<0.5	<0.5	<PQL	-	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
TP14	1.9-2.0	14/09/2016	<0.05	<0.5	<0.5	<PQL	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	8.4	24
TP14	2.9-3.0	14/09/2016	<0.05	<0.5	<0.5	<PQL	-	-	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
TP15	0.6-0.7	14/09/2016	0.3	<0.5	<0.5	3.7	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
TP16	0.4-0.5	14/09/2016	<0.05	<0.5	<0.5	<PQL	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	8.2	8.5
BH17	0.4-0.5	14/09/2016	<0.05	<0.5	<0.5	<PQL	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
BH18	0.4-0.5	14/09/2016	<0.05	<0.5	<0.5	<PQL	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
BH19	0.0-0.2	14/09/2016	<0.05	<0.5	<0.5	<PQL	-	-	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
BH19	0.55-0.65	14/09/2016	<0.05	<0.5	<0.5	<PQL	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
BH20	0.0-0.2	14/09/2016	<0.05	<0.5	<0.5	<PQL	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
BH21	0.4-0.5	14/09/2016	<0.05	<0.5	<0.5	<PQL	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
BH22	0.0-0.2	14/09/2016	<0.05	<0.5	<0.5	<PQL	<5	<PQL	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	NAD	-	-	-	-	-
BD3/130916	-	14/09/2016	0.4	0.5	0.5	4.3	-	-	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	-	-	-	-	-	-
BD4	-	14/09/2016	<0.05	<0.5	<0.5	<PQL	-	-	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	-	-	-	-	-	-
BD5	-	14/09/2016	<0.05	<0.5	<0.5	<PQL	-	-	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	-	-	-	-	-	-
BD6	-	14/09/2016	0.3	<0.5	<0.5	3.8	-	-	<50	<100	<100	-	<25	<50	<100	<100	<PQL	<25	-	-	-	-	-	-
Spike	-	14/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blank	-	14/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asb 1 (TP9/1.4m)	-	13/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**Chrysotile Amosite Crocidolite**	-	-	-	-
Asb 2 (TP10/1.5m)	-	14/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**Chrysotile**	-	-	-	-
Asb 3 (TP10/2.8m)	-	14/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**Chrysotile Amosite Crocidolite**	-	-	-	-
Asb 4 (TP11/2m)	-	14/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**Chrysotile Amosite**	-	-	-	-
Asb 5 (TP11/2.9m)	-	14/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**Chrysotile Amosite Crocidolite**	-	-	-	-
Asb 6 (TP12/1.4m)	-	14/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**Chrysotile Amosite**	-	-	-	-
Asb 7 (TP12/2.8m)	-	14/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**Chrysotile Amosite**	-	-	-	-
Asb 8 (TP14/1.5m)	-	14/09/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**Chrysotile**	-	-	-	-

Notes:

BTEX	Benzene, Toluene, Ethylbenzene and Xylene
CRC CARE	Cooperative Research Centre for Contamination Assessmer
HIL	Health Investigation Level
HSL	Health Screening Level
NAD	No Asbestos Detected at Reporting Limit of 0.1g/kg
NEPC (2013)	National Environmental Protection Measure 1999 as amen
OCP/OPP	Organochlorine Pesticides/Organophosphorus Pesticides
PCB	Polychlorinated Biphenyls

11. Discussion of Results

The fieldwork observations identified a general sub-surface profile across the site of filling overlying sandstone (presumed to be the top of sandstone bedrock, or potentially detached boulders), with filling depths increasing towards the south and south-west. The fill beneath the former bowling greens was assessed to be relatively free of anthropogenics and visual indicators of potential contamination. The maximum fill depth observed was 4.2 m (TP11), however fill embankments in the south-western portion of the site were estimated by DP (in 2006) to be potentially up to 9 m high. The fill in general appears to be uncontrolled.

The laboratory results indicated that the majority of analyte concentrations in the soil samples analysed were within the adopted SAC, with the exception of the following:

- The lead HIL of 300 mg/kg was exceeded at TP14/0.4-0.5 m (630 mg/kg) and at TP14/1.9-2.0 m (820 mg/kg);
- The copper EIL of 100 mg/kg was exceeded at TP11/0.4-0.5 m (210 mg/kg); and
- The benzo(a)pyrene EIL of 0.7 mg/kg was exceeded at TP9/1.4-1.5 m (0.83 mg/kg).

The EIL exceedences were relatively minor and are not considered to be significant.

Fragments of fibre cement material were collected from test pits TP9, TP10, TP11, TP12 and TP14. These were tested by the laboratory and found to contain asbestos:

- Fragment Asb1 (TP9) contained chrysotile, amosite and crocidolite asbestos;
- Fragment Asb2 (TP10) contained chrysotile asbestos;
- Fragment Asb3 (TP10) contained chrysotile, amosite and crocidolite asbestos;
- Fragment Asb4 (TP11) contained chrysotile and amosite asbestos;
- Fragment Asb5 (TP11) contained chrysotile, amosite and crocidolite asbestos;
- Fragment Asb6 (TP12) contained chrysotile and amosite asbestos;
- Fragment Asb7 (TP12) contained chrysotile and amosite asbestos; and
- Fragment Asb8 (TP14) contained chrysotile asbestos.

All the abovementioned contaminants were identified in the south and south-western portions of the site, and are associated with the fill composition comprising various proportions of anthropogenics. A preliminary geotechnical investigation report prepared by DP in 2006 (Reference 44456) states that:

There appears to be a significant amount of filling, whose depth is unknown, in the south western half of the site. Further investigation would be required to check thickness and condition. It is unlikely that the filling could be considered "controlled filling". In its present condition, the filling is considered to be unsuitable for the support of structural loads and ground slabs.

The variable compaction within the existing filling could give rise to differential settlements, even though the filling has been in place for some time, unless some form of treatment is adopted. It is very difficult to estimate the extent of settlement which may take place, nevertheless it is contrary to standard engineering practice to build on variable compacted uncontrolled filling.

The options for the support of structural loads, slabs and pavements therefore should include either support on reworked filling or on natural material below the filling. Further details can be provided on possible treatment of the filling following geotechnical investigation of the site.

We are not aware of any further geotechnical investigation at the site and therefore recommend that such an investigation be undertaken to determine the most appropriate course of action in terms of treatment of the fill.

In terms of contamination, it appears that the most significant risk relates to the presence of asbestos in the fill. Given the volume of fill it is likely that the complete removal of all fill would be economically unviable. A methodology involving the retention of the soil (following any treatment / management required for geotechnical stability purposes) and capping with a clean and validated soils, appears to be the most practical means of managing the risk, given that the site will be open to the public. The final methodology needs to be documented in a remediation action plan (RAP).

12. Conclusion and Recommendations

Based on the previous PSI and this current DSI, it is considered that the site, in its current state, is not suitable for the proposed development. The site can be made suitable for the proposed development through the following recommended actions:

- Undertake a detailed geotechnical investigation, targeting primarily the deeper fill across the south and south-western portions of the site in order to determine an appropriate method of stabilising the currently uncontrolled deep fill, and forming an appropriate building platform for the proposed development;
- Develop a remediation action plan (RAP) to document the remedial and management actions required to render the site suitable for the proposed development. The RAP must be formulated around the preferred method of fill management, based on geotechnical requirements, and is likely to outline a preferred remediation strategy of fill retention and capping with a validated material;
- Implementation of a fill management plan based on geotechnical requirements, together with the requirements of the RAP; and
- Validation of the works.

It is noted that, given the identification of asbestos in the fill, a more details asbestos investigation could be undertake in line with the procedures documented in NEPC (2013). Whilst the outcome probably will not change the requirement of capping the soils (given the sensitivity of the proposed land use) it will inform some of the details such as the lateral extent and thickness of the requirement capping layer.

Any surplus soils required to be removed from the site must be initially waste classified in accordance with NSW *Waste Classification Guidelines* (2014). Based on current results it appears that the fill at the site will largely classify as Special Waste (Asbestos) or General Solid Waste (non-putrescible).

13. Limitations

Douglas Partners (DP) has prepared this report (or services) for this project at River Road, Oatley in accordance with DP's proposal dated 1 September 2016 and acceptance received from Georges River Council dated 5 September 2016. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of Georges River Council for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

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

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

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

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

Douglas Partners Pty Ltd

Appendix A

Drawings

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Georges River Council		TITLE: **Site Locality and Investigation Area** **Proposed Aged Care Facility** **Detailed Site Investigation, River Road, Oatley**	PROJECT No:	73308.02
	OFFICE: Sydney	DRAWN BY: KS		DRAWING No:	1
	SCALE: As shown	DATE: 20.10.2016		REVISION:	A

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Georges River Council		TITLE: **Test Location Plan** **Proposed Aged Care Facility** **Detailed Site Investigation, River Road Oatley**	PROJECT No:	73308.02
	OFFICE: Sydney	DRAWN BY: KS		DRAWING No:	2
	SCALE: As shown	DATE: 20.10.2016		REVISION:	A

Appendix B

Site Photographs

Photo 1 – Site Looking North

Photo 2 – Stream and bush land to the south and west

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Former Oatley Bowling Club** **Oatley, NSW**	PROJECT: 73308.01 PLATE No: 1 REV: -
	CLIENT: Hurstville City Council	DATE: Jan - 2016

Photo 3 – Footprint of former bowling club building

Photo 4 – Damaged timber retaining structures

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Former Oatley Bowling Club** **Oatley, NSW**	PROJECT: 73308.01 PLATE No: 2 REV: -
	CLIENT: Hurstville City Council	DATE: Jan - 2016

Photo 5 – Failing retaining wall for bowling greens (note metal brace)

Photo 6 – Electrical box on lower bowling green

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Former Oatley Bowling Club** **Oatley, NSW**	PROJECT: 73308.01 PLATE No: 3 REV: -
	CLIENT: Hurstville City Council	DATE: Jan - 2016

Photo 7 – Electrical box on upper bowling green

Photo 8 – Lower bowling green looking south-east

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Former Oatley Bowling Club** **Oatley, NSW**	PROJECT: 73308.01 PLATE No: 4 REV: -
	CLIENT: Hurstville City Council	DATE: Jan - 2016

Photo 9 – Littering to the south of the bowling greens

Photo 10 – Rubble Stockpile

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Former Oatley Bowling Club** **Oatley, NSW**	PROJECT: 73308.01 PLATE No: 5 REV: -
	CLIENT: Hurstville City Council	DATE: Jan - 2016

Photo 11 – Potential Asbestos Containing Material

Photo 12 – Metal shed on upper green

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Former Oatley Bowling Club** **Oatley, NSW**	PROJECT: 73308.01 PLATE No: 6 REV: -
	CLIENT: Hurstville City Council	DATE: Jan - 2016

Appendix C

Quality Assurance/Quality Control

DATA QUALITY ASSESSMENT

Q1. Data Quality Objectives

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

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

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

Table Q1: Data Quality Objectives

Data Quality Objective	Report Section where Addressed
State the Problem	S1 Introduction
Identify the Decision	S1 Introduction (objective) S11 Discussion S12 Conclusion and Recommendations
Identify Inputs to the Decision	S1 Introduction S2 Scope of Works S5 Previous Reports S6 Conceptual Site Model S8 Site Assessment Criteria S9 Fieldwork Observations S10 Analytical Results
Define the Boundary of the Assessment	S3 Site Description Site Drawings - Appendix A
Develop a Decision Rule	S8 Site Assessment Criteria
Specify Acceptable Limits on Decision Errors	S7 Fieldwork and Analysis S8 Site Assessment Criteria QA/QC Procedures and Results – Sections Q2, Q3
Optimise the Design for Obtaining Data	S2 Scope of Works S7 Fieldwork and Analysis QA/QC Procedures and Results – Sections Q2, Q3

Q2. FIELD AND LABORATORY QUALITY CONTROL

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

Table Q2: Field QC

Item	Frequency	Acceptance Criteria	Achievement
Intra-laboratory replicates	5% primary samples	RPD <30% inorganics), <50% (organics)	yes[1]
Inter-laboratory replicates	5% primary samples	RPD <30% inorganics), <50% (organics)	no[2]
Trip Spikes	1 per field batch	60-140% recovery	yes
Trip Blanks	1 per field batch	<PQL/LOR	yes

NOTES: 1 qualitative assessment of RPD results overall; refer Section Q2.1
2 No inter-laboratory replicates analysed, as all replicates were sent to ELS

Table Q3: Laboratory QC

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

NOTES: 1 ELS: <5xPQL – any RPD; >5xPQL – 0-50%RPD

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

Q2.1 Intra-Laboratory Replicates

Intra-laboratory replicates were analysed as an internal check of the reproducibility within the primary laboratory ELS and as a measure of consistency of sampling techniques. The comparative results of analysis between original and intra-laboratory replicate samples are summarised in Table Q4.

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

Table Q4: Relative Percentage Difference Results – Intra-laboratory Replicates

Lab	Sample ID	Date Sampled	Media	Units	Metals										PAH				TRH				BTEX			
					As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	Fe	Mn	total	BaP TEQ	BaP	Naphthalene	C6-C10	>C10-C16	>C16-C34	>C34-C40	Benzene	Toluene	Ethylbenzene	xylene
ELS	TP9/2.4-2.5	13/09/2016	filling	mg/kg	<4	<0.4	3	12	11	<0.1	<1	10	-	36	<PQL	<0.5	<0.05	<0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3
ELS	BD3	13/09/2016	filling	mg/kg	5	<0.4	14	12	15	<0.1	1	14	-	12	4.3	0.5	0.4	0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3
Difference				mg/kg	-	-	11	0	4	-	-	4	-	24	-	-	-	-	-	-	-	-	-	-	-	-
RPD				%	-	-	**129**	0	**31**	-	-	**33**	-	**100**	-	-	-	-	-	-	-	-	-	-	-	-
ELS	TP10/3.4-3.5	13/09/2016	Fill	mg/kg	<4	<0.4	9	8	30	<0.1	3	30	-	43	0.16	<0.5	0.06	<0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3
ELS	BD4	13/09/2016	fill	mg/kg	7	<0.4	9	8	30	<0.1	2	19	-	33	<PQL	<0.5	<0.05	<0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3
Difference				mg/kg	-	-	0	0	0	-	1	11	-	10	-	-	-	-	-	-	-	-	-	-	-	-
RPD				%	-	-	0	0	0	-	**40**	**45**	-	26	-	-	-	-	-	-	-	-	-	-	-	-
ELS	TP12/0.4-0.5	14/09/2016	Fill	mg/kg	5	<0.4	13	14	35	<0.1	10	24	-	78	<PQL	<0.5	<0.05	<0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3
ELS	BD5	14/09/2016	fill	mg/kg	<4	<0.4	8	5	31	<0.1	3	33	-	110	<PQL	<0.5	<0.05	<0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3
Difference				mg/kg	-	-	5	9	4	-	7	9	-	32	-	-	-	-	-	-	-	-	-	-	-	-
RPD				%	-	-	**48**	**95**	12	-	**108**	**32**	-	**34**	-	-	-	-	-	-	-	-	-	-	-	-
ELS	TP16/0.4-0.5	14/09/2016	Fill	mg/kg	13	<0.4	18	6	53	<0.1	1	47	-	23	<PQL	<0.5	<0.05	<0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3
ELS	BD6	14/09/2016	fill	mg/kg	10	<0.4	13	13	92	<0.1	3	86	-	37	3.8	<0.5	0.3	<0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3
Difference				mg/kg	3	-	5	7	39	-	2	39	-	14	-	-	-	-	-	-	-	-	-	-	-	-
RPD				%	26	-	**32**	**74**	**54**	-	**100**	**59**	-	**47**	-	-	-	-	-	-	-	-	-	-	-	-

Notes: - not applicable, not tested

The calculated RPD values were generally within the acceptable range of ± 30 for inorganic analytes and ± 50% for organics with the with the exception of those in bold. However, this is not considered to be significant because: The typically low actual differences in the concentrations of the replicate pairs where some RPD exceedances occurred. High RPD values reflect the small differences between two small numbers;

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

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

Q3. Data Quality Indicators

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

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

The DQIs were assessed as outlined in the following Table Q5.

Table Q5: Data Quality Indicators

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

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

Appendix D

Test Pit and Borehole Logs

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

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

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.

Soil Descriptions

Douglas Partners

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 loner 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:

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

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_{50}	Undisturbed tube sample (50mm)
W	Water sample
pp	pocket penetrometer (kPa)
PID	Photo ionisation detector
PL	Point load strength Is(50) MPa
S	Standard Penetration Test
V	Shear vane (kPa)

Description of Defects in Rock

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

Defect Type

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

Orientation

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

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

Coating or Infilling Term

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

Coating Descriptor

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

Shape

cu	curved
ir	irregular
pl	planar
st	stepped
un	undulating

Roughness

po	polished
ro	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

Symbols & Abbreviations

Graphic Symbols for Soil and Rock

General


Asphalt


Road base


Concrete


Filling

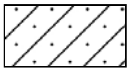
Soils


Topsoil

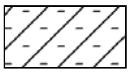

Peat


Clay

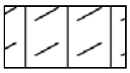

Silty clay

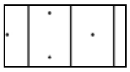

Sandy clay

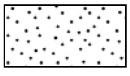

Gravelly clay

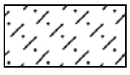

Shaly clay

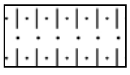

Silt


Clayey silt


Sandy silt

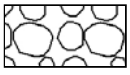

Sand

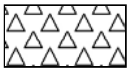

Clayey sand


Silty sand


Gravel


Sandy gravel


Cobbles, boulders

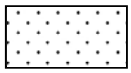

Talus

Sedimentary Rocks

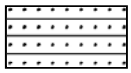

Boulder conglomerate

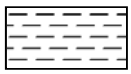

Conglomerate


Conglomeratic sandstone

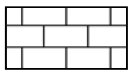

Sandstone


Siltstone


Laminite

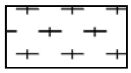

Mudstone, claystone, shale

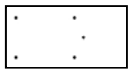

Coal


Limestone

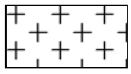
Metamorphic Rocks

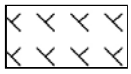

Slate, phyllite, schist

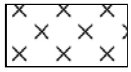

Gneiss

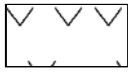

Quartzite

Igneous Rocks


Granite


Dolerite, basalt, andesite


Dacite, epidote


Tuff, breccia


Porphyry

TEST PIT LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 26.9 AHD
EASTING:
NORTHING:

PIT No: TP1
PROJECT No: 73308.02
DATE: 13/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
									5 10 15 20
		FILLING - brown, clayey, medium sand filling with some rootlets (topsoil)		D	0.0		PID<2		
					0.2				
	0.3	FILLING - grey, loose, basalt gravel to cobble filling (railway ballast)			0.4		PID<2		
	0.4			D	0.5				
	0.6	FILLING - grey, clayey sand filling with some sandstone gravel to cobble.							
		Pit discontinued at 0.6m - refusal on sandstone							
26	1								1
25	2								2
24	3								3
23	4								4
22									

RIG: 5.5t excavator
LOGGED: MW
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 26.9 AHD
EASTING:
NORTHING:

PIT No: TP2
PROJECT No: 73308.02
DATE: 13/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
									5 10 15 20
		FILLING - brown, clayey, medium sand filling with some rootlets (topsoil)		D	0.0		PID<2		
					0.2				
	0.4	FILLING - grey, loose, basalt gravel filling (railway ballast)		D	0.4		PID<2		
	0.5	FILLING - grey, clayey sand filling with some sandstone gravel to cobble		D	0.5		PID<3		
	0.65	Pit discontinued at 0.65m - refusal on sandstone			0.6				
26	1								1
25	2								2
24	3								3
23	4								4
22									

RIG: 5.5t excavator
LOGGED: MW
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 26.9 AHD
EASTING:
NORTHING:

PIT No: TP3
PROJECT No: 73308.02
DATE: 13/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
26	0.0	FILLING - brown, clayey, medium sand filling with traces of rootlets (topsoil)		D	0.0		PID<2		
					0.2				
	0.4	FILLING - grey, loose, basalt gravel filling (railway ballast)		D	0.4		PID<2		
	0.5	FILLING - grey, mottled yellow and red, clayey sand filling with some sandstone boulders and traces of wood		D	0.5		PID<2		
					0.6				
	1			D	1.0		PID<3		1
	1.1	Pit discontinued at 1.1m - refusal on sandstone			1.1				
25	2								2
24	3								3
23	4								4
22									

Dynamic Penetrometer Test (blows per mm): 5 10 15 20

RIG: 5.5t excavator
LOGGED: MW
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

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

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TEST PIT LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 26.9 AHD
EASTING:
NORTHING:

PIT No: TP4
PROJECT No: 73308.02
DATE: 13/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
26	0.0	FILLING - brown, clayey, medium sand filling with some rootlets (topsoil)		D	0.0		PID<3		
					0.2				
	0.3	FILLING - grey, loose, basalt gravel filling (railway ballast)							
	0.4	FILLING - grey, clayey sand filling with some sandstone gravel to boulders							
				D	0.7		PID<2		
					0.8				
	1.0	Pit discontinued at 1.0m - refusal on sandstone							
25									
24									
23									
22									

RIG: 5.5t excavator
LOGGED: MW
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Local resident noted that upper field was created by importing large sandstone boulders and placing filling on top

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

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

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Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 26.9 AHD
EASTING:
NORTHING:

PIT No: TP5
PROJECT No: 73308.02
DATE: 13/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
		FILLING - brown, clayey, medium sand filling with some rootlets		D	0.0		PID<4		
					0.2				
	0.4	FILLING - grey, loose, basalt gravel filling (railway ballast)		D	0.4		PID<3		
	0.5	FILLING - grey mottled yellow/brown, clayey sand filling with some sandstone gravel to boulders and traces of rootlets			0.5				
26	1			D	0.9		PID<2		1
					1.0				
				D	1.4		PID<2		
					1.5				
25	2			D*	1.9		PID<3		2
	2.2	Pit discontinued at 2.2m - refusal on sandstone			2.0				
24	3								3
23	4								4
22									

RIG: 5.5t excavator
LOGGED: MW
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *BD1/130916 taken from 1.9-2.0m

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

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

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TEST PIT LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 26.9 AHD
EASTING:
NORTHING:

PIT No: TP6
PROJECT No: 73308.02
DATE: 13/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
26	0.0	FILLING - brown, medium sand filling with some clay and rootlets (topsoil)		D	0.0		PID<3		
					0.2				
	0.3	FILLING - grey, loose, basalt gravel filling (railway ballast)		D	0.3		PID<3		
	0.4	FILLING - grey, medium sand filling with some clay and sandstone gravel to boulders			0.4				
	1			D	0.9		PID<3		1
	1.1	Pit discontinued at 1.1m - refusal on sandstone			1.0				
25	2								2
24	3								3
23	4								4
22									

RIG: 5.5t excavator
LOGGED: MW
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Samples below gravel drainage layer in TP1-6 contain gravel from fall-in

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

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

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TEST PIT LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 26.1 AHD
EASTING:
NORTHING:

PIT No: TP7A
PROJECT No: 73308.02
DATE: 13/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
26	0.2	FILLING - brown, medium sand and basalt gravel filling with some shale gravel to boulders traces of bricks and tile fragments		A	0.0		PID<1		
		Pit discontinued at 0.2m - refusal on sandstone			0.2				
25	1								1
24	2								2
23	3								3
22	4								4

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 5.5t excavator

LOGGED: MW

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Identical soil profile in TP7B 2m to North

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

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

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TEST PIT LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 24.6 AHD
EASTING:
NORTHING:

PIT No: TP8A
PROJECT No: 73308.02
DATE: 13/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.02	ASPHALT		D	0.0		PID<1		
	0.2	FILLING - grey medium sand and basalt gravel filling with traces of tiles, roadbase		D	0.2		PID<1		
	0.3	FILLING - light brown, sandy clay filling with some ripped sandstone gravel to cobble and traces of ironstone gravel			0.3				
	0.35	FILLING - brown and fine to medium sand filling with some silt and sandstone gravel							
24		Pit discontinued at 0.35m - refusal on sandstone							
	1								1
23									
	2								2
22									
	3								3
21									
	4								4
20									

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 5.5t excavator
LOGGED: MW
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

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

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Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 24.6 AHD
EASTING:
NORTHING:

PIT No: TP8B
PROJECT No: 73308.02
DATE: 13/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
24	0.0	FILLING - dark grey, fine silty sand filling with some roots and rootlets		D	0.0		PID<1		
	0.2	FILLING - brown, fine to medium sand filling with some silt and sandstone gravel to boulders and traces of roots rootlets and asphalt/bitumen fragments			0.2				
				D	0.4		PID<1		
					0.5				
	1			D	0.9		PID<1		1
					1.0				
23				D	1.4		PID<1		
	1.7				1.5				
		Pit discontinued at 1.7m - refusal on sandstone							
	2								2
22									
	3								3
21									
	4								4
20									

RIG: 5.5t excavator
LOGGED: MW
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

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

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Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 21.2 AHD
EASTING:
NORTHING:

PIT No: TP9
PROJECT No: 73308.02
DATE: 13/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
21	0.05	ASPHALT			0.05		PID<1		
		FILLING - brown mottled yellow, grey and red, sandy clay filling with some shale and sandstone gravel to cobble and traces of ironstone gravel, charcoal, and asphalt and bricks fragment		D	0.2				
				D	0.4		PID<1		
					0.5				
				D*	0.9		PID<1		
	1	1.1m: timber beam			1.0				1
20	1.1	FILLING - brown, sandy clay filling with some shale and sandstone gravel to boulders, bricks and brick fragments and traces of rootlets, tile fragments wood, concrete fragments and fibre cement material		D	1.4		PID<1		
		1.4m: fibre cement fragment (asbestos)			1.5				
		- light brown and yellow medium sand filling with some clay and sandstone from 1.6m to 1.7m							
	2			D	1.9		PID<2		2
					2.0				
19	2.1	FILLING - dark grey, silty sand filling with some sandstone gravel to cobble							
				D	2.4		PID<2		
					2.5				
	2.7	Pit discontinued at 2.7m - refusal on sandstone							
	3								3
18									
	4								4
17									

RIG: 5.5t excavator
LOGGED: MW
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *BD2/130916 taken at 0.9m to 1.0m

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

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

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TEST PIT LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 20.6 AHD
EASTING:
NORTHING:

PIT No: TP10
PROJECT No: 73308.02
DATE: 13/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
									5 10 15 20
		FILLING - dark grey, clayey sand filling with some rootlets and traces of sandstone gravel and brick		D	0.0		PID<1		
					0.2				
	0.4	FILLING - light brown and yellow, clayey, gravelly (sandstone) sand filling with some sandstone boulders and bricks and traces of concrete fragments and plastic		D	0.4		PID<1		
20					0.5				
				D	0.9		PID<1		
	1	1.0m: timber			1.0				1
				D	1.4		PID<1		
		1.5m: fibre cement material (asbestos)			1.5				
19	1.6	FILLING - light grey and white, clayey sand filling with some sandstone gravel to boulders		D	1.9		PID<2		
	2				2.0				2
	2.1	FILLING - brown, clayey, medium to coarse sand filling with some sandstone gravel to boulders and traces of metal wire, concrete fragments, bricks, scrap metal, wood, glass, shale gravel and tile fragments		D	2.4		PID<2		
18					2.5				
		2.8m: fibre cement pipe (asbestos)		D	2.9		PID<2		
	3				3.0				3
	3.2	FILLING - dark grey, clayey sand filling with some sandstone and shale gravel to cobble and traces of fibre cement material, bricks and brick fragments, tile fragments and burnt wood fragments		D	3.4		PID<2		
17					3.5				
	3.7	Pit discontinued at 3.7m - refusal on sandstone							
	4								4
16									

RIG: 5.5t excavator
LOGGED: MW
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: BD3/130916 taken at 0.9-1.0m

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

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

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Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 19.6 AHD
EASTING:
NORTHING:

PIT No: TP11
PROJECT No: 73308.02
DATE: 13/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
					0.0		PID<1		
		FILLING - dark grey, silty clay with some rootlets		D					
	0.2				0.2				
		FILLING - light brown, clayey sand filling with some sandstone gravel to cobble							
					0.4		PID<3		
				D	0.5				
19									
	0.75								
		FILLING - brown mottled orange, sandy clay filling with some sandstone gravel and charcoal/burnt wood			0.9		PID<2		
	1			D	1.0				1
	1.1								
		FILLING - brown, clayey sand filling with some sandstone and shale gravel to boulders, bricks and brick fragments and traces of wood, plastic, scrap metal and concrete fragments			1.4		PID<3		
				D	1.5				
18									
					1.9		PID<2		
	2			D	2.0				2
		2.0m: fibre cement fragment (asbestos) - burnt wood/charcoal at numerous depths (1.7m, 2.0m, 2.6m and 3.5m)							
					2.4		PID<2		
				D	2.5				
17									
					2.9		PID<3		
	3	2.9m: fibre cement fragment (asbestos)		D	3.0				3
					3.4		PID<2		
				D	3.5				
16									
					3.9		PID<3		
	4			D	4.0				4
	4.2	Pit discontinued at 4.2m - refusal on sandstone							
15									

RIG: 5.5t excavator
LOGGED: MW
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

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

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Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 20.2 AHD
EASTING:
NORTHING:

PIT No: TP12
PROJECT No: 73308.02
DATE: 13/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
20	0.05	ASPHALT		D	0.0				
		FILLING - grey, medium to coarse sand and basalt gravel filling with some asphalt (roadbase)			0.2				
	0.3	FILLING - light brown, medium sand and light grey clay filling with some shale gravel and sandstone gravel to cobble and traces of asphalt		D	0.4				
					0.5				
	0.6	FILLING - brown, clayey, medium to coarse sand filling with some shale and sandstone gravel to boulders, brick and file fragments and traces of fibre cement material, concrete fragments, asphalt, plastic, burnt wood, charcoal and scrap metal		D	0.9				
	1				1.0				1
19		1.4m: fibre cement material (asbestos)		D	1.4				
					1.5				
				D	1.9				
	2				2.0				2
18				D	2.4				
					2.5				
		2.8m: fibre cement material (asbestos)		D	2.9				
	3				3.0				3
17				D	3.4				
					3.5				
				D	3.9				
	4 4.0	Pit discontinued at 4.0m - refusal on sandstone			4.0				4
16									

RIG: 5.5t excavator
LOGGED: MW
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

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

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TEST PIT LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 22.0 AHD
EASTING:
NORTHING:

PIT No: TP13
PROJECT No: 73308.02
DATE: 14/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
22		FILLING - light brown, medium to coarse clayey sand filling with some sandstone gravel and traces of concrete fragments basalt gravel and burnt wood		D	0.0 0.2		PID<2		
	0.4	FILLING - dark grey, silty medium to coarse sand filling with some sandstone gravel to cobble		D	0.6 0.7		PID<2		
21	1 1.0	Pit discontinued at 1.0m - refusal on sandstone							1
20	2								2
19	3								3
18	4								4

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 5.5t excavator

LOGGED: MW

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

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

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TEST PIT LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 20.1 AHD
EASTING:
NORTHING:

PIT No: TP14
PROJECT No: 73308.02
DATE: 14/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
20	0.0	FILLING - brown, clayey, medium to coarse sand filling with some brick fragments and sandstone and shale gravel to cobble and traces of scrap metal		D	0.0		PID<1		
					0.2				
				D	0.4		PID<2		
					0.5				
	0.9				0.9		PID<2		
19	1	FILLING - dark grey, clayey, medium to coarse sand and terracotta tile filling with some bricks and brick fragments, sandstone gravel to cobble and traces of concrete fragments scrap metal, plastic, shale gravel, asphalt and burnt wood and fibre cement material		D	1.0				1
				D	1.4		PID<2		
		1.5m: fibre cement fragment (asbestos)			1.5				
	2			D	1.9		PID<3		2
18	2.1	FILLING - brown, clayey, medium to coarse sand filling with some terracotta tiles, sandstone and shale gravel to boulders and brick fragments and traces of burnt wood/roots and concrete fragments			2.0				
				D	2.4		PID<3		
					2.5				
				D	2.9		PID<2		
	3				3.0				3
17	3.0	Pit discontinued at 3.0m - refusal on sandstone							
	4								4
16									

RIG: 5.5t excavator
LOGGED: MW
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

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

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TEST PIT LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 21.1 AHD
EASTING:
NORTHING:

PIT No: TP15
PROJECT No: 73308.02
DATE: 14/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
21	0.0	FILLING - brown, medium, silty sand filling with some rootlets (topsoil)		D	0.0		PID<1		
					0.2				
	0.5	FILLING - light brown mottled grey, medium slightly clayey sand filling with some bricks and brick fragments and traces of concrete and shale gravel to cobble		D	0.6		PID<1		
	0.8				0.7				
20	1	Pit discontinued at 0.8m - refusal on sandstone							1
19	2								2
18	3								3
17	4								4

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 5.5t excavator

LOGGED: MW

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

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

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TEST PIT LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 20.0 AHD
EASTING:
NORTHING:

PIT No: TP16
PROJECT No: 73308.02
DATE: 14/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
20	0.05	ASPHALT		D	0.0		PID<1		
		FILLING - brown, medium slightly clayey sand filling with some sandstone gravel to cobble, bricks and bricks fragments and traces of charcoal, tile, concrete fragments, fibre cement material, glass and basalt gravel			0.2				
				D	0.4		PID<1		
					0.5				
	0.9								
19	1	FILLING - yellow medium to coarse, clayey sand filling		D	0.9		PID<1		1
	1.1				1.0				
		Pit discontinued at 1.1m - refusal on sandstone							
18	2								2
17	3								3
16	4								4

Dynamic Penetrometer Test (blows per mm): 5, 10, 15, 20

RIG: 5.5t excavator
LOGGED: MW
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

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

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 22.7 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: BH17
PROJECT No: 73308.02
DATE: 14/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		FILLING - dark grey, medium silty sand filling with some rootlets		D	0.0		PID<1		
	0.3	FILLING - brown, medium to coarse sand filling		D	0.2		PID<1		
	0.5				0.4				
	0.53	FILLING - brown mottled yellow, medium clayey sand filling with traces of sandstone gravel			0.5				
		Bore discontinued at 0.52m - refusal on sandstone (presumed)							

RIG: Hand tools **DRILLER:** MW **LOGGED:** MW **CASING:** Uncased
TYPE OF BORING: Hand auger
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 22.7 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: BH18
PROJECT No: 73308.02
DATE: 14/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
22.7	0.0	FILLING - dark grey, medium silty sand filling with some rootlets		D	0.0		PID<1		
					0.2				
22.4	0.3	FILLING - brown, medium to coarse sand filling			0.4				
				D			PID<3		
		0.55m: becoming slightly clayey			0.5				
22.1	0.6	Bore discontinued at 0.6m - refusal on sandstone (presumed)							
21.7	1								1
21.4	1.3								
21.1	1.6								
20.7	2								2
20.4	2.3								
20.1	2.6								
19.7	3								3
19.4	3.3								
19.1	3.6								
18.7	4								4
18.4	4.3								
18.1	4.6								

RIG: Hand tools **DRILLER:** MW **LOGGED:** MW **CASING:** Uncased
TYPE OF BORING: Hand auger
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 22.7 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: BH19
PROJECT No: 73308.02
DATE: 14/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		FILLING - dark grey, medium silty sand filling with some rootlets		D	0.0		PID<1		
	0.3	FILLING - brown, medium to coarse sand filling			0.2				
				D	0.4		PID<2		
	0.55				0.5				
	0.65	FILLING - brown mottled yellow, medium clayey sand filling with traces of sandstone gravel		D	0.55		PID<1		
		Bore discontinued at 0.65m - refusal on sandstone (presumed)			0.65				

RIG: Hand tools **DRILLER:** MW **LOGGED:** MW **CASING:** Uncased
TYPE OF BORING: Hand auger
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 22.7 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: BH20
PROJECT No: 73308.02
DATE: 14/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		FILLING - dark grey medium silty sand filling with some rootlets (topsoil)		D	0.0		PID<1		
	0.3	FILLING - brown, medium to coarse sand filling			0.2				
				D	0.4		PID<1		
	0.55	FILLING - brown mottled red and grey clay and fine to coarse sand filling with traces of sandstone gravel			0.5				
				D	0.6		PID<1		
22	0.7	Bore discontinued at 0.7m - refusal on sandstone (presumed)			0.7				
	1								1
21									
	2								2
20									
	3								3
19									
	4								4
18									

RIG: Hand tools **DRILLER:** MW **LOGGED:** MW **CASING:** Uncased
TYPE OF BORING: Hand auger
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 22.7 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: BH21
PROJECT No: 73308.02
DATE: 14/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.0	FILLING - dark grey, medium silty sand filling with some rootlets (topsoil)		D	0.0		PID<1		
	0.2				0.2				
	0.3	FILLING - brown, medium to coarse sand filling							
	0.4			D	0.4		PID<1		
	0.5	0.5m: becoming slightly clayey			0.5				
	0.6	Bore discontinued at 0.6m - refusal on sandstone (presumed)							

RIG: Hand tools **DRILLER:** MW **LOGGED:** MW **CASING:** Uncased
TYPE OF BORING: Hand auger
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: Georges River Council
PROJECT: Former Oatley Bowling Club Intrusive Investigation
LOCATION: River Road, Oatley

SURFACE LEVEL: 22.7 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: BH22
PROJECT No: 73308.02
DATE: 14/9/2016
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		FILLING - dark grey, medium silty sand filling with some rootlets (topsoil)		D	0.0		PID<1		
	0.3	FILLING - brown medium to coarse sand filling			0.2				
		0.6m: becoming clayey with some sandstone gravel		D	0.4		PID<1		
	0.65	Bore discontinued at 0.65m - refusal on sandstone (presumed)			0.5				

RIG: Hand tools **DRILLER:** MW **LOGGED:** MW **CASING:** Uncased
TYPE OF BORING: Hand auger
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

Appendix E

Laboratory Certificates and Chain-of-Custody

12 Ashley Street, Chatswood, NSW 2067
tel: +61 2 9910 6200

email: sydney@envirolab.com.au
envirolab.com.au

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

CERTIFICATE OF ANALYSIS 153754

Client:
Douglas Partners Pty Ltd
96 Hermitage Rd
West Ryde
NSW 2114

Attention: Michael Whittaker, Kate Sargent

Sample log in details:

Your Reference:	**73308.02, Oatley**
No. of samples:	8 Materials 45 Soils
Date samples received / completed instructions received	16/09/2016 / 16/09/2016

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:	23/09/16 / 26/09/16
Date of Preliminary Report:	Not Issued

NATA accreditation number 2901. This document shall not be reproduced except in full.
Accredited for compliance with ISO/IEC 17025 - Testing **Tests not covered by NATA are denoted with *.**

Results Approved By:

David Springer
General Manager

VOCs in soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	153754-1 TP1 0.4-0.5 13/09/2016 Soil	153754-2 TP2 0.4-0.5 13/09/2016 Soil	153754-5 TP3 0.5-0.36 13/09/2016 Soil	153754-8 TP5 0.4-0.5 13/09/2016 Soil	153754-12 TP8B 0.9-1.0 13/09/2016 Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
Dichlorodifluoromethane	mg/kg	<1	<1	<1	<1	<1
Chloromethane	mg/kg	<1	<1	<1	<1	<1
Vinyl Chloride	mg/kg	<1	<1	<1	<1	<1
Bromomethane	mg/kg	<1	<1	<1	<1	<1
Chloroethane	mg/kg	<1	<1	<1	<1	<1
Trichlorofluoromethane	mg/kg	<1	<1	<1	<1	<1
1,1-Dichloroethene	mg/kg	<1	<1	<1	<1	<1
trans-1,2-dichloroethene	mg/kg	<1	<1	<1	<1	<1
1,1-dichloroethane	mg/kg	<1	<1	<1	<1	<1
cis-1,2-dichloroethene	mg/kg	<1	<1	<1	<1	<1
bromochloromethane	mg/kg	<1	<1	<1	<1	<1
chloroform	mg/kg	<1	<1	<1	<1	<1
2,2-dichloropropane	mg/kg	<1	<1	<1	<1	<1
1,2-dichloroethane	mg/kg	<1	<1	<1	<1	<1
1,1,1-trichloroethane	mg/kg	<1	<1	<1	<1	<1
1,1-dichloropropene	mg/kg	<1	<1	<1	<1	<1
Cyclohexane	mg/kg	<1	<1	<1	<1	<1
carbon tetrachloride	mg/kg	<1	<1	<1	<1	<1
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
dibromomethane	mg/kg	<1	<1	<1	<1	<1
1,2-dichloropropane	mg/kg	<1	<1	<1	<1	<1
trichloroethene	mg/kg	<1	<1	<1	<1	<1
bromodichloromethane	mg/kg	<1	<1	<1	<1	<1
trans-1,3-dichloropropene	mg/kg	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	mg/kg	<1	<1	<1	<1	<1
1,1,2-trichloroethane	mg/kg	<1	<1	<1	<1	<1
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichloropropane	mg/kg	<1	<1	<1	<1	<1
dibromochloromethane	mg/kg	<1	<1	<1	<1	<1
1,2-dibromoethane	mg/kg	<1	<1	<1	<1	<1
tetrachloroethene	mg/kg	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	mg/kg	<1	<1	<1	<1	<1
chlorobenzene	mg/kg	<1	<1	<1	<1	<1
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
bromoform	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
styrene	mg/kg	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	mg/kg	<1	<1	<1	<1	<1

VOCs in soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	153754-1 TP1 0.4-0.5 13/09/2016 Soil	153754-2 TP2 0.4-0.5 13/09/2016 Soil	153754-5 TP3 0.5-0.36 13/09/2016 Soil	153754-8 TP5 0.4-0.5 13/09/2016 Soil	153754-12 TP8B 0.9-1.0 13/09/2016 Soil
o-Xylene	mg/kg	<1	<1	<1	<1	<1
1,2,3-trichloropropane	mg/kg	<1	<1	<1	<1	<1
isopropylbenzene	mg/kg	<1	<1	<1	<1	<1
bromobenzene	mg/kg	<1	<1	<1	<1	<1
n-propyl benzene	mg/kg	<1	<1	<1	<1	<1
2-chlorotoluene	mg/kg	<1	<1	<1	<1	<1
4-chlorotoluene	mg/kg	<1	<1	<1	<1	<1
1,3,5-trimethyl benzene	mg/kg	<1	<1	<1	<1	<1
tert-butyl benzene	mg/kg	<1	<1	<1	<1	<1
1,2,4-trimethyl benzene	mg/kg	<1	<1	<1	<1	<1
1,3-dichlorobenzene	mg/kg	<1	<1	<1	<1	<1
sec-butyl benzene	mg/kg	<1	<1	<1	<1	<1
1,4-dichlorobenzene	mg/kg	<1	<1	<1	<1	<1
4-isopropyl toluene	mg/kg	<1	<1	<1	<1	<1
1,2-dichlorobenzene	mg/kg	<1	<1	<1	<1	<1
n-butyl benzene	mg/kg	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	mg/kg	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	mg/kg	<1	<1	<1	<1	<1
hexachlorobutadiene	mg/kg	<1	<1	<1	<1	<1
1,2,3-trichlorobenzene	mg/kg	<1	<1	<1	<1	<1
Surrogate Dibromofluorometha	%	100	98	95	100	102
Surrogate aaa-Trifluorotoluene	%	91	93	94	90	95
Surrogate Toluene-d_8	%	99	99	100	100	100
Surrogate 4-Bromofluorobenzene	%	103	103	102	105	104

VOCs in soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	153754-15 TP9 1.4-1.5 13/09/2016 Soil	153754-18 TP10 1.4-1.5 13/09/2016 Soil	153754-19 TP10 2.4-2.5 13/09/2016 Soil	153754-23 TP11 3.4-3.5 13/09/2016 Soil	153754-25 TP12 0.9-1.0 13/09/2016 Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
Dichlorodifluoromethane	mg/kg	<1	<1	<1	<1	<1
Chloromethane	mg/kg	<1	<1	<1	<1	<1
Vinyl Chloride	mg/kg	<1	<1	<1	<1	<1
Bromomethane	mg/kg	<1	<1	<1	<1	<1
Chloroethane	mg/kg	<1	<1	<1	<1	<1
Trichlorofluoromethane	mg/kg	<1	<1	<1	<1	<1
1,1-Dichloroethene	mg/kg	<1	<1	<1	<1	<1
trans-1,2-dichloroethene	mg/kg	<1	<1	<1	<1	<1
1,1-dichloroethane	mg/kg	<1	<1	<1	<1	<1
cis-1,2-dichloroethene	mg/kg	<1	<1	<1	<1	<1
bromochloromethane	mg/kg	<1	<1	<1	<1	<1
chloroform	mg/kg	<1	<1	<1	<1	<1
2,2-dichloropropane	mg/kg	<1	<1	<1	<1	<1
1,2-dichloroethane	mg/kg	<1	<1	<1	<1	<1
1,1,1-trichloroethane	mg/kg	<1	<1	<1	<1	<1
1,1-dichloropropene	mg/kg	<1	<1	<1	<1	<1
Cyclohexane	mg/kg	<1	<1	<1	<1	<1
carbon tetrachloride	mg/kg	<1	<1	<1	<1	<1
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
dibromomethane	mg/kg	<1	<1	<1	<1	<1
1,2-dichloropropane	mg/kg	<1	<1	<1	<1	<1
trichloroethene	mg/kg	<1	<1	<1	<1	<1
bromodichloromethane	mg/kg	<1	<1	<1	<1	<1
trans-1,3-dichloropropene	mg/kg	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	mg/kg	<1	<1	<1	<1	<1
1,1,2-trichloroethane	mg/kg	<1	<1	<1	<1	<1
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichloropropane	mg/kg	<1	<1	<1	<1	<1
dibromochloromethane	mg/kg	<1	<1	<1	<1	<1
1,2-dibromoethane	mg/kg	<1	<1	<1	<1	<1
tetrachloroethene	mg/kg	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	mg/kg	<1	<1	<1	<1	<1
chlorobenzene	mg/kg	<1	<1	<1	<1	<1
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
bromoform	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
styrene	mg/kg	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	mg/kg	<1	<1	<1	<1	<1
o-Xylene	mg/kg	<1	<1	<1	<1	<1

VOCs in soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	153754-15 TP9 1.4-1.5 13/09/2016 Soil	153754-18 TP10 1.4-1.5 13/09/2016 Soil	153754-19 TP10 2.4-2.5 13/09/2016 Soil	153754-23 TP11 3.4-3.5 13/09/2016 Soil	153754-25 TP12 0.9-1.0 13/09/2016 Soil
1,2,3-trichloropropane	mg/kg	<1	<1	<1	<1	<1
isopropylbenzene	mg/kg	<1	<1	<1	<1	<1
bromobenzene	mg/kg	<1	<1	<1	<1	<1
n-propyl benzene	mg/kg	<1	<1	<1	<1	<1
2-chlorotoluene	mg/kg	<1	<1	<1	<1	<1
4-chlorotoluene	mg/kg	<1	<1	<1	<1	<1
1,3,5-trimethyl benzene	mg/kg	<1	<1	<1	<1	<1
tert-butyl benzene	mg/kg	<1	<1	<1	<1	<1
1,2,4-trimethyl benzene	mg/kg	<1	<1	<1	<1	<1
1,3-dichlorobenzene	mg/kg	<1	<1	<1	<1	<1
sec-butyl benzene	mg/kg	<1	<1	<1	<1	<1
1,4-dichlorobenzene	mg/kg	<1	<1	<1	<1	<1
4-isopropyl toluene	mg/kg	<1	<1	<1	<1	<1
1,2-dichlorobenzene	mg/kg	<1	<1	<1	<1	<1
n-butyl benzene	mg/kg	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	mg/kg	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	mg/kg	<1	<1	<1	<1	<1
hexachlorobutadiene	mg/kg	<1	<1	<1	<1	<1
1,2,3-trichlorobenzene	mg/kg	<1	<1	<1	<1	<1
Surrogate Dibromofluorometha	%	101	99	101	100	102
Surrogate aaa-Trifluorotoluene	%	94	109	90	92	90
Surrogate Toluene-d_8	%	100	99	99	100	99
Surrogate 4-Bromofluorobenzene	%	104	102	104	100	101

SVOCs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	153754-1 TP1 0.4-0.5 13/09/2016 Soil	153754-2 TP2 0.4-0.5 13/09/2016 Soil	153754-5 TP3 0.5-0.36 13/09/2016 Soil	153754-8 TP5 0.4-0.5 13/09/2016 Soil	153754-12 TP8B 0.9-1.0 13/09/2016 Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
Phenol	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bis-(2-chloroethyl) ether	mg/kg	<1	<1	<1	<1	<1
2-Chlorophenol	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bis (2-chloroisopropyl) ether	mg/kg	<1	<1	<1	<1	<1
3/4-Methylphenol	mg/kg	<1	<1	<1	<1	<1
N-nitrosodi-n-propylamine	mg/kg	<1	<1	<1	<1	<1
Hexachloroethane	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Nitrobenzene	mg/kg	<1	<1	<1	<1	<1
Isophorone	mg/kg	<1	<1	<1	<1	<1
2,4-Dimethylphenol	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Nitrophenol	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroethoxy)methane	mg/kg	<1	<1	<1	<1	<1
2,4-Dichlorophenol	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloroaniline	mg/kg	<1	<1	<1	<1	<1
Hexachlorobutadiene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	mg/kg	<5	<5	<5	<5	<5
2-Methylnaphthalene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorocyclopentadiene	mg/kg	<2	<2	<2	<2	<2
2,4,6-trichlorophenol	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-trichlorophenol	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chloronaphthalene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-nitroaniline	mg/kg	<1	<1	<1	<1	<1
Dimethylphthalate	mg/kg	<1	<1	<1	<1	<1
2,6-Dinitrotoluene	mg/kg	<1	<1	<1	<1	<1
Acenaphthylene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3-Nitroaniline	mg/kg	<1	<1	<1	<1	<1
Acenaphthene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-dinitrophenol	mg/kg	<10	<10	<10	<10	<10
4-nitrophenol	mg/kg	<10	<10	<10	<10	<10
Dibenzofuran	mg/kg	<1	<1	<1	<1	<1
diethylphthalate	mg/kg	<1	<1	<1	<1	<1
4-chlorophenylphenylether	mg/kg	<1	<1	<1	<1	<1
4-nitroaniline	mg/kg	<1	<1	<1	<1	<1

SVOCs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	153754-1 TP1 0.4-0.5 13/09/2016 Soil	153754-2 TP2 0.4-0.5 13/09/2016 Soil	153754-5 TP3 0.5-0.36 13/09/2016 Soil	153754-8 TP5 0.4-0.5 13/09/2016 Soil	153754-12 TP8B 0.9-1.0 13/09/2016 Soil
Fluorene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-methyl-4,6-dinitrophenol	mg/kg	<10	<10	<10	<10	<10
azobenzene	mg/kg	<1	<1	<1	<1	<1
4-bromophenylphenylether	mg/kg	<1	<1	<1	<1	<1
hexachlorobenzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
pentachlorophenol	mg/kg	<5	<5	<5	<5	<5
Phenanthrene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
carbazole	mg/kg	<1	<1	<1	<1	<1
di-n-butylphthalate	mg/kg	<1	<1	<1	<1	<1
Fluoranthene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
butylbenzylphthalate	mg/kg	<1	<1	<1	<1	<1
bis(2-ethylhexyl)phthalate	mg/kg	<1	<1	<1	<1	<1
Benzo(a)anthracene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
di-n-octylphthalate	mg/kg	<1	<1	<1	<1	<1
Benzo(b+j+k)fluoranthene	mg/kg	<1	<1	<1	<1	<1
Benzo(a)pyrene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenzo(a,h)anthracene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ethylmethanesulfonate	mg/kg	<1	<1	<1	<1	<1
aniline	mg/kg	<1	<1	<1	<1	<1
pentachloroethane	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
benzyl alcohol	mg/kg	<1	<1	<1	<1	<1
acetophenone	mg/kg	<1	<1	<1	<1	<1
N-nitrosomorpholine	mg/kg	<1	<1	<1	<1	<1
N-nitrosopiperidine	mg/kg	<1	<1	<1	<1	<1
2,6-dichlorophenol	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
hexachloropropene-1	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitroso-n-butylamine	mg/kg	<1	<1	<1	<1	<1
safrole	mg/kg	<1	<1	<1	<1	<1
1,2,4,5-tetrachlorobenzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis and trans iso-safrole	mg/kg	<1	<1	<1	<1	<1
1,3-dinitrobenzene	mg/kg	<1	<1	<1	<1	<1
pentachlorobenzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1-naphthylamine	mg/kg	<1	<1	<1	<1	<1
2,3,4,6-tetrachlorophenol	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-naphthylamine	mg/kg	<1	<1	<1	<1	<1
5-nitro-o-toluidine	mg/kg	<1	<1	<1	<1	<1

SVOCs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	153754-1 TP1 0.4-0.5 13/09/2016 Soil	153754-2 TP2 0.4-0.5 13/09/2016 Soil	153754-5 TP3 0.5-0.36 13/09/2016 Soil	153754-8 TP5 0.4-0.5 13/09/2016 Soil	153754-12 TP8B 0.9-1.0 13/09/2016 Soil
diphenylamine	mg/kg	<1	<1	<1	<1	<1
phenacetin	mg/kg	<1	<1	<1	<1	<1
pentachloronitrobenzene	mg/kg	<1	<1	<1	<1	<1
dinoseb	mg/kg	<1	<1	<1	<1	<1
methapyrilene	mg/kg	<1	<1	<1	<1	<1
p-dimethylaminoazobenzene	mg/kg	<1	<1	<1	<1	<1
2-acetylaminofluorene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
7,12-dimethylbenz(a)anthracene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3-methylcholanthrene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
a-BHC	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
b-BHC	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
g-BHC	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
d-BHC	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Aldrin	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor Epoxide	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
g-Chlordane	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
a-Chlordane	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan I	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
p,p'-DDE	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
p,p'-DDD	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan II	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin Aldehyde	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
p,p'-DDT	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin Ketone	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan Sulphate	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	mg/kg	<1	<1	<1	<1	<1
Surrogate 2-fluorophenol	%	73	69	72	68	68
Surrogate Phenol-d_6	%	68	65	62	53	63
Surrogate Nitrobenzene-d_5	%	68	73	66	63	62
Surrogate 2-fluorobiphenyl	%	69	73	71	67	67
Surrogate 2,4,6-Tribromophenol	%	108	60	70	130	72
Surrogate p-Terphenyl-d_{14}	%	104	70	100	73	101

SVOCs in Soil						
Our Reference:	UNITS	153754-15	153754-18	153754-19	153754-23	153754-25
Your Reference	----------	TP9	TP10	TP10	TP11	TP12
Depth	- ----------	1.4-1.5	1.4-1.5	2.4-2.5	3.4-3.5	0.9-1.0
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
Phenol	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bis-(2-chloroethyl) ether	mg/kg	<1	<1	<1	<1	<1
2-Chlorophenol	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bis (2-chloroisopropyl) ether	mg/kg	<1	<1	<1	<1	<1
3/4-Methylphenol	mg/kg	<1	<1	<1	<1	<1
N-nitrosodi-n-propylamine	mg/kg	<1	<1	<1	<1	<1
Hexachloroethane	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Nitrobenzene	mg/kg	<1	<1	<1	<1	<1
Isophorone	mg/kg	<1	<1	<1	<1	<1
2,4-Dimethylphenol	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Nitrophenol	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bis(2-chloroethoxy)methane	mg/kg	<1	<1	<1	<1	<1
2,4-Dichlorophenol	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloroaniline	mg/kg	<1	<1	<1	<1	<1
Hexachlorobutadiene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	mg/kg	<5	<5	<5	<5	<5
2-Methylnaphthalene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorocyclopentadiene	mg/kg	<2	<2	<2	<2	<2
2,4,6-trichlorophenol	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-trichlorophenol	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chloronaphthalene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-nitroaniline	mg/kg	<1	<1	<1	<1	<1
Dimethylphthalate	mg/kg	<1	<1	<1	<1	<1
2,6-Dinitrotoluene	mg/kg	<1	<1	<1	<1	<1
Acenaphthylene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3-Nitroaniline	mg/kg	<1	<1	<1	<1	<1
Acenaphthene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-dinitrophenol	mg/kg	<10	<10	<10	<10	<10
4-nitrophenol	mg/kg	<10	<10	<10	<10	<10
Dibenzofuran	mg/kg	<1	<1	<1	<1	<1
diethylphthalate	mg/kg	<1	<1	<1	<1	<1
4-chlorophenylphenylether	mg/kg	<1	<1	<1	<1	<1
4-nitroaniline	mg/kg	<1	<1	<1	<1	<1

SVOCs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	153754-15 TP9 1.4-1.5 13/09/2016 Soil	153754-18 TP10 1.4-1.5 13/09/2016 Soil	153754-19 TP10 2.4-2.5 13/09/2016 Soil	153754-23 TP11 3.4-3.5 13/09/2016 Soil	153754-25 TP12 0.9-1.0 13/09/2016 Soil
Fluorene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-methyl-4,6-dinitrophenol	mg/kg	<10	<10	<10	<10	<10
azobenzene	mg/kg	<1	<1	<1	<1	<1
4-bromophenylphenylether	mg/kg	<1	<1	<1	<1	<1
hexachlorobenzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
pentachlorophenol	mg/kg	<5	<5	<5	<5	<5
Phenanthrene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
carbazole	mg/kg	<1	<1	<1	<1	<1
di-n-butylphthalate	mg/kg	<1	<1	<1	<1	<1
Fluoranthene	mg/kg	0.7	<0.5	<0.5	1	<0.5
Pyrene	mg/kg	0.8	<0.5	<0.5	1	<0.5
butylbenzylphthalate	mg/kg	<1	<1	<1	<1	<1
bis(2-ethylhexyl)phthalate	mg/kg	<1	<1	<1	<1	<1
Benzo(a)anthracene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
di-n-octylphthalate	mg/kg	<1	<1	<1	<1	<1
Benzo(b+j+k)fluoranthene	mg/kg	2	<1	<1	<1	<1
Benzo(a)pyrene	mg/kg	0.7	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.7	<0.5	<0.5	<0.5	<0.5
Dibenzo(a,h)anthracene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	mg/kg	0.7	<0.5	<0.5	<0.5	<0.5
ethylmethanesulfonate	mg/kg	<1	<1	<1	<1	<1
aniline	mg/kg	<1	<1	<1	<1	<1
pentachloroethane	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
benzyl alcohol	mg/kg	<1	<1	<1	<1	<1
acetophenone	mg/kg	<1	<1	<1	<1	<1
N-nitrosomorpholine	mg/kg	<1	<1	<1	<1	<1
N-nitrosopiperidine	mg/kg	<1	<1	<1	<1	<1
2,6-dichlorophenol	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
hexachloropropene-1	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
N-nitroso-n-butylamine	mg/kg	<1	<1	<1	<1	<1
safrole	mg/kg	<1	<1	<1	<1	<1
1,2,4,5-tetrachlorobenzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis and trans iso-safrole	mg/kg	<1	<1	<1	<1	<1
1,3-dinitrobenzene	mg/kg	<1	<1	<1	<1	<1
pentachlorobenzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1-naphthylamine	mg/kg	<1	<1	<1	<1	<1
2,3,4,6-tetrachlorophenol	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-naphthylamine	mg/kg	<1	<1	<1	<1	<1
5-nitro-o-toluidine	mg/kg	<1	<1	<1	<1	<1

SVOCs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ----------	153754-15 TP9 1.4-1.5 13/09/2016 Soil	153754-18 TP10 1.4-1.5 13/09/2016 Soil	153754-19 TP10 2.4-2.5 13/09/2016 Soil	153754-23 TP11 3.4-3.5 13/09/2016 Soil	153754-25 TP12 0.9-1.0 13/09/2016 Soil
diphenylamine	mg/kg	<1	<1	<1	<1	<1
phenacetin	mg/kg	<1	<1	<1	<1	<1
pentachloronitrobenzene	mg/kg	<1	<1	<1	<1	<1
dinoseb	mg/kg	<1	<1	<1	<1	<1
methapyrilene	mg/kg	<1	<1	<1	<1	<1
p-dimethylaminoazobenzene	mg/kg	<1	<1	<1	<1	<1
2-acetylaminofluorene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
7,12-dimethylbenz(a)anthracene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3-methylcholanthrene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
a-BHC	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
b-BHC	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
g-BHC	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
d-BHC	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Aldrin	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor Epoxide	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
g-Chlordane	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
a-Chlordane	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan I	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
p,p'-DDE	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
p,p'-DDD	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan II	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin Aldehyde	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
p,p'-DDT	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin Ketone	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan Sulphate	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	mg/kg	<1	<1	<1	<1	<1
Surrogate 2-fluorophenol	%	77	62	77	80	78
Surrogate Phenol-d_6	%	71	60	68	74	71
Surrogate Nitrobenzene-d_5	%	69	61	69	73	70
Surrogate 2-fluorobiphenyl	%	70	64	72	74	74
Surrogate 2,4,6-Tribromophenol	%	117	65	124	90	117
Surrogate p-Terphenyl-d_{14}	%	109	78	108	112	109

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	153754-1	153754-3	153754-4	153754-5	153754-6
Your Reference	---------- -	TP1	TP2	TP3	TP3	TP4
Depth	----------	0.4-0.5	0.5-0.36	0.0-0.2	0.5-0.36	0.7-0.8
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	20/09/2016	20/09/2016	21/09/2016	20/09/2016
TRHC$_6$ - C$_9$	mg/kg	<25	<25	<25	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25	<25	<25	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	91	90	88	94	89

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	153754-7	153754-9	153754-10	153754-11	153754-13
Your Reference	---------- -	TP5	TP5	TP6	TP7A	TP8B
Depth	----------	0.0-0.2	1.9-2.0	0.0-0.2	0.0-0.2	1.4-1.5
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	21/09/2016	20/09/2016	20/09/2016	20/09/2016
TRHC$_6$ - C$_9$	mg/kg	<25	<25	<25	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25	<25	<25	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	79	85	96	104	108

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	153754-14	153754-15	153754-16	153754-17	153754-19
Your Reference	----------	TP9	TP9	TP9	TP10	TP10
Depth	- ----------	0.4-0.5	1.4-1.5	2.4-2.5	0.9-1.0	2.4-2.5
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	20/09/2016	20/09/2016	21/09/2016
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
vTPHC6 - C10 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	%	85	94	81	110	90

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	153754-20	153754-21	153754-22	153754-23	153754-24
Your Reference	----------	TP10	TP11	TP11	TP11	TP12
Depth	- ----------	3.4-3.5	0.4-0.5	1.4-1.5	3.4-3.5	0.4-0.5
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	20/09/2016
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
vTPHC6 - C10 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	%	89	69	82	92	97

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	153754-25	153754-26	153754-27	153754-28	153754-29
Your Reference	---------- -	TP12	TP12	TP13	TP14	TP14
Depth	----------	0.9-1.0	2.9-3.0	0.0-0.2	0.4-0.5	1.9-2.0
Date Sampled		13/09/2016	13/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	20/09/2016	20/09/2016	20/09/2016	21/09/2016
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
vTPHC6 - C10 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	%	90	114	94	78	82

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	153754-30	153754-31	153754-32	153754-33	153754-34
Your Reference	---------- -	TP14	TP15	TP16	BH17	BH18
Depth	----------	2.9-3.0	0.6-0.7	0.4-0.5	0.4-0.5	0.4-0.5
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
vTPHC6 - C10 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	%	79	111	99	85	112

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	153754-35	153754-36	153754-37	153754-38	153754-39
Your Reference	---------- -	BH19	BH19	BH20	BH21	BH22
Depth	----------	0.0-0.2	0.55-0.65	0.0-0.2	0.4-0.5	0.0-0.2
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
TRHC$_6$ - C$_9$	mg/kg	<25	<25	<25	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25	<25	<25	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	89	88	83	84	104

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	153754-40	153754-41	153754-42	153754-43	153754-44
Your Reference	---------- -	Spike	Blank	BD3/130916	BD4	BD5
Depth	----------	-	-	-	-	-
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
TRHC$_6$ - C$_9$	mg/kg	[NA]	[NA]	<25	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	[NA]	[NA]	<25	<25	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	[NA]	[NA]	<25	<25	<25
Benzene	mg/kg	97%	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	97%	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	97%	<1	<1	<1	<1
m+p-xylene	mg/kg	98%	<2	<2	<2	<2
o-Xylene	mg/kg	98%	<1	<1	<1	<1
naphthalene	mg/kg	[NA]	[NA]	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	91	107	97	95	72

vTRH(C6-C10)/BTEXN in Soil		
Our Reference:	UNITS	153754-45
Your Reference	----------	BD6
	-	
Depth	----------	-
Date Sampled		14/09/2016
Type of sample		Soil
Date extracted	-	19/09/2016
Date analysed	-	21/09/2016
TRHC$_6$ - C$_9$	mg/kg	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
naphthalene	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	104

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	153754-1	153754-3	153754-4	153754-5	153754-6
Your Reference	----------	TP1	TP2	TP3	TP3	TP4
Depth	- ----------	0.4-0.5	0.5-0.36	0.0-0.2	0.5-0.36	0.7-0.8
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg					
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	66	79	80	81	81

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	153754-7	153754-9	153754-10	153754-11	153754-13
Your Reference	----------	TP5	TP5	TP6	TP7A	TP8B
Depth	- ----------	0.0-0.2	1.9-2.0	0.0-0.2	0.0-0.2	1.4-1.5
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg					
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	79	80	82	79	82

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	153754-14	153754-15	153754-16	153754-17	153754-19
Your Reference	----------	TP9	TP9	TP9	TP10	TP10
Depth	- ----------	0.4-0.5	1.4-1.5	2.4-2.5	0.9-1.0	2.4-2.5
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	21/09/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg					
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	81	81	79	78	81

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	153754-20	153754-21	153754-22	153754-23	153754-24
Your Reference	----------	TP10	TP11	TP11	TP11	TP12
Depth	- ----------	3.4-3.5	0.4-0.5	1.4-1.5	3.4-3.5	0.4-0.5
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg					
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	80	80	80	80	80

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	153754-25	153754-26	153754-27	153754-28	153754-29
Your Reference	---------- -	TP12	TP12	TP13	TP14	TP14
Depth	----------	0.9-1.0	2.9-3.0	0.0-0.2	0.4-0.5	1.9-2.0
Date Sampled		13/09/2016	13/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg					
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	79	80	82	79	80

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	153754-30	153754-31	153754-32	153754-33	153754-34
Your Reference	---------- -	TP14	TP15	TP16	BH17	BH18
Depth	----------	2.9-3.0	0.6-0.7	0.4-0.5	0.4-0.5	0.4-0.5
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg					
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	80	83	79	81	81

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	153754-35	153754-36	153754-37	153754-38	153754-39
Your Reference	---------- -	BH19	BH19	BH20	BH21	BH22
Depth	----------	0.0-0.2	0.55-0.65	0.0-0.2	0.4-0.5	0.0-0.2
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg					
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	79	80	80	79	81

svTRH (C10-C40) in Soil					
Our Reference:	UNITS	153754-42	153754-43	153754-44	153754-45
Your Reference	---------- -	BD3/130916	BD4	BD5	BD6
Depth	----------	-	-	-	-
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg				
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100
Surrogate o-Terphenyl	%	80	81	80	80

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	153754-1 TP1 0.4-0.5 13/09/2016 Soil	153754-3 TP2 0.5-0.36 13/09/2016 Soil	153754-4 TP3 0.0-0.2 13/09/2016 Soil	153754-5 TP3 0.5-0.36 13/09/2016 Soil	153754-6 TP4 0.7-0.8 13/09/2016 Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
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 Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	95	90	86	100	88

PAHs in Soil Our Reference: Your Reference	UNITS ----------	153754-7 TP5	153754-9 TP5	153754-10 TP6	153754-11 TP7A	153754-13 TP8B
Depth	----------	0.0-0.2	1.9-2.0	0.0-0.2	0.0-0.2	1.4-1.5
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
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 Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	88	87	88	87	89

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	153754-14 TP9 0.4-0.5 13/09/2016 Soil	153754-15 TP9 1.4-1.5 13/09/2016 Soil	153754-16 TP9 2.4-2.5 13/09/2016 Soil	153754-17 TP10 0.9-1.0 13/09/2016 Soil	153754-19 TP10 2.4-2.5 13/09/2016 Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
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	0.3	<0.1
Anthracene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.2	0.6	<0.1	0.5	<0.1
Pyrene	mg/kg	0.2	0.7	<0.1	0.4	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.4	<0.1	0.2	<0.1
Chrysene	mg/kg	<0.1	0.5	<0.1	0.2	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	2	<0.2	0.3	<0.2
Benzo(a)pyrene	mg/kg	0.08	0.83	<0.05	0.2	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.6	<0.1	0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.6	<0.1	0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	1.2	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	1.2	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	1.2	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	0.44	6.3	NIL (+)VE	2.3	NIL (+)VE
Surrogate p-Terphenyl-d14	%	88	98	96	92	98

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	153754-20 TP10 3.4-3.5 13/09/2016 Soil	153754-21 TP11 0.4-0.5 13/09/2016 Soil	153754-22 TP11 1.4-1.5 13/09/2016 Soil	153754-23 TP11 3.4-3.5 13/09/2016 Soil	153754-24 TP12 0.4-0.5 13/09/2016 Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	0.4	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	0.9	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	0.3	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	0.3	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	0.6	<0.2
Benzo(a)pyrene	mg/kg	0.06	<0.05	0.06	0.4	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	0.3	<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	0.3	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	0.5	<0.5
Total Positive PAHs	mg/kg	0.16	NIL (+)VE	0.060	4.6	NIL (+)VE
Surrogate p-Terphenyl-d14	%	90	91	90	97	91

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	153754-25 TP12 0.9-1.0 13/09/2016 Soil	153754-26 TP12 2.9-3.0 13/09/2016 Soil	153754-27 TP13 0.0-0.2 14/09/2016 Soil	153754-28 TP14 0.4-0.5 14/09/2016 Soil	153754-29 TP14 1.9-2.0 14/09/2016 Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
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 Positive PAHs	mg/kg	NIL (+)VE	0.22	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	98	89	93	90	89

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	153754-30 TP14 2.9-3.0 14/09/2016 Soil	153754-31 TP15 0.6-0.7 14/09/2016 Soil	153754-32 TP16 0.4-0.5 14/09/2016 Soil	153754-33 BH17 0.4-0.5 14/09/2016 Soil	153754-34 BH18 0.4-0.5 14/09/2016 Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
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	0.7	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	0.3	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.6	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	0.6	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.3	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	0.3	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	0.4	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.3	<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 Positive PAHs	mg/kg	NIL (+)VE	3.7	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	89	89	93	89	88

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	153754-35 BH19 0.0-0.2 14/09/2016 Soil	153754-36 BH19 0.55-0.65 14/09/2016 Soil	153754-37 BH20 0.0-0.2 14/09/2016 Soil	153754-38 BH21 0.4-0.5 14/09/2016 Soil	153754-39 BH22 0.0-0.2 14/09/2016 Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
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 Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	90	90	92	90	90

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	153754-42 BD3/130916 - 14/09/2016 Soil	153754-43 BD4 - 14/09/2016 Soil	153754-44 BD5 - 14/09/2016 Soil	153754-45 BD6 - 14/09/2016 Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.4	<0.1	<0.1	0.5
Anthracene	mg/kg	<0.1	<0.1	<0.1	0.1
Fluoranthene	mg/kg	0.8	<0.1	<0.1	0.9
Pyrene	mg/kg	0.8	<0.1	<0.1	0.8
Benzo(a)anthracene	mg/kg	0.3	<0.1	<0.1	0.3
Chrysene	mg/kg	0.4	<0.1	<0.1	0.3
Benzo(b,j+k)fluoranthene	mg/kg	0.6	<0.2	<0.2	0.4
Benzo(a)pyrene	mg/kg	0.4	<0.05	<0.05	0.3
Indeno(1,2,3-c,d)pyrene	mg/kg	0.2	<0.1	<0.1	0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.2	<0.1	<0.1	0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	4.3	NIL (+)VE	NIL (+)VE	3.8
Surrogate p-Terphenyl-d14	%	91	92	91	90

Organochlorine Pesticides in soil						
Our Reference:	UNITS	153754-1	153754-3	153754-4	153754-6	153754-9
Your Reference	----------	TP1	TP2	TP3	TP4	TP5
	-					
Depth	----------	0.4-0.5	0.5-0.36	0.0-0.2	0.7-0.8	1.9-2.0
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/09/2016	16/09/2016	16/09/2016	16/09/2016	16/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
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	%	91	91	91	93	93

Organochlorine Pesticides in soil						
Our Reference:	UNITS	153754-10	153754-11	153754-13	153754-15	153754-19
Your Reference	----------	TP6	TP7A	TP8B	TP9	TP10
	-					
Depth	----------	0.0-0.2	0.0-0.2	1.4-1.5	1.4-1.5	2.4-2.5
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/09/2016	16/09/2016	16/09/2016	16/09/2016	16/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
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	0.5	<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	%	97	91	95	95	95

Organochlorine Pesticides in soil						
Our Reference:	UNITS	153754-20	153754-22	153754-23	153754-25	153754-26
Your Reference	----------	TP10	TP11	TP11	TP12	TP12
	-					
Depth	----------	3.4-3.5	1.4-1.5	3.4-3.5	0.9-1.0	2.9-3.0
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/09/2016	16/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
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	%	95	93	93	93	93

Organochlorine Pesticides in soil						
Our Reference:	UNITS	153754-27	153754-29	153754-31	153754-32	153754-33
Your Reference	----------	TP13	TP14	TP15	TP16	BH17
Depth	- ----------	0.0-0.2	1.9-2.0	0.6-0.7	0.4-0.5	0.4-0.5
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
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	0.3
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	%	95	95	94	95	97

Organochlorine Pesticides in soil						
Our Reference:	UNITS	153754-34	153754-36	153754-37	153754-38	153754-39
Your Reference	----------	BH18	BH19	BH20	BH21	BH22
Depth	- ----------	0.4-0.5	0.55-0.65	0.0-0.2	0.4-0.5	0.0-0.2
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
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	0.2	<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	0.2	<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	%	98	94	93	95	94

Organophosphorus Pesticides						
Our Reference:	UNITS	153754-1	153754-3	153754-4	153754-6	153754-9
Your Reference	---------- -	TP1	TP2	TP3	TP4	TP5
Depth	----------	0.4-0.5	0.5-0.36	0.0-0.2	0.7-0.8	1.9-2.0
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/09/2016	16/09/2016	16/09/2016	16/09/2016	16/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
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	%	91	91	91	93	93

Organophosphorus Pesticides						
Our Reference:	UNITS	153754-10	153754-11	153754-13	153754-15	153754-19
Your Reference	---------- -	TP6	TP7A	TP8B	TP9	TP10
Depth	----------	0.0-0.2	0.0-0.2	1.4-1.5	1.4-1.5	2.4-2.5
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/09/2016	16/09/2016	16/09/2016	16/09/2016	16/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
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	%	97	91	95	95	95

Organophosphorus Pesticides						
Our Reference:	UNITS	153754-20	153754-22	153754-23	153754-25	153754-26
Your Reference	---------- -	TP10	TP11	TP11	TP12	TP12
Depth	----------	3.4-3.5	1.4-1.5	3.4-3.5	0.9-1.0	2.9-3.0
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/09/2016	16/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	95	93	93	93	93

Organophosphorus Pesticides						
Our Reference:	UNITS	153754-27	153754-29	153754-31	153754-32	153754-33
Your Reference	---------- -	TP13	TP14	TP15	TP16	BH17
Depth	----------	0.0-0.2	1.9-2.0	0.6-0.7	0.4-0.5	0.4-0.5
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	95	95	94	95	97

Organophosphorus Pesticides Our Reference: Your Reference	UNITS ----------	153754-34 BH18	153754-36 BH19	153754-37 BH20	153754-38 BH21	153754-39 BH22
Depth	-	0.4-0.5	0.55-0.65	0.0-0.2	0.4-0.5	0.0-0.2
Date Sampled	----------	14/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
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	%	98	94	93	95	94

PCBs in Soil						
Our Reference:	UNITS	153754-1	153754-3	153754-4	153754-6	153754-9
Your Reference	----------	TP1	TP2	TP3	TP4	TP5
	-					
Depth	----------	0.4-0.5	0.5-0.36	0.0-0.2	0.7-0.8	1.9-2.0
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/09/2016	16/09/2016	16/09/2016	16/09/2016	16/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
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	%	91	91	91	93	93

PCBs in Soil						
Our Reference:	UNITS	153754-10	153754-11	153754-13	153754-15	153754-19
Your Reference	----------	TP6	TP7A	TP8B	TP9	TP10
	-					
Depth	----------	0.0-0.2	0.0-0.2	1.4-1.5	1.4-1.5	2.4-2.5
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/09/2016	16/09/2016	16/09/2016	16/09/2016	16/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
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	%	97	91	95	95	95

PCBs in Soil						
Our Reference:	UNITS	153754-20	153754-22	153754-23	153754-25	153754-26
Your Reference	----------	TP10	TP11	TP11	TP12	TP12
	-					
Depth	----------	3.4-3.5	1.4-1.5	3.4-3.5	0.9-1.0	2.9-3.0
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/09/2016	16/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
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	%	95	93	93	93	93

PCBs in Soil						
Our Reference:	UNITS	153754-27	153754-29	153754-31	153754-32	153754-33
Your Reference	----------	TP13	TP14	TP15	TP16	BH17
	-					
Depth	----------	0.0-0.2	1.9-2.0	0.6-0.7	0.4-0.5	0.4-0.5
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
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	%	95	95	94	95	97

PCBs in Soil						
Our Reference:	UNITS	153754-34	153754-36	153754-37	153754-38	153754-39
Your Reference	----------	BH18	BH19	BH20	BH21	BH22
	-					
Depth	----------	0.4-0.5	0.55-0.65	0.0-0.2	0.4-0.5	0.0-0.2
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	21/09/2016	21/09/2016	21/09/2016	21/09/2016	21/09/2016
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	%	98	94	93	95	94

Acid Extractable metals in soil						
Our Reference:	UNITS	153754-1	153754-3	153754-4	153754-5	153754-6
Your Reference	----------	TP1	TP2	TP3	TP3	TP4
	-					
Depth	----------	0.4-0.5	0.5-0.36	0.0-0.2	0.5-0.36	0.7-0.8
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	16/09/2016	16/09/2016	16/09/2016	16/09/2016	16/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Arsenic	mg/kg	<4	5	<4	7	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	5	5	9	7	8
Copper	mg/kg	3	3	7	4	4
Lead	mg/kg	4	4	7	7	5
Mercury	mg/kg	<0.1	<0.1	0.6	<0.1	0.2
Nickel	mg/kg	<1	<1	2	3	4
Zinc	mg/kg	6	8	12	16	14
Manganese	mg/kg	4	7	120	58	47

Acid Extractable metals in soil						
Our Reference:	UNITS	153754-7	153754-9	153754-10	153754-11	153754-13
Your Reference	----------	TP5	TP5	TP6	TP7A	TP8B
	-					
Depth	----------	0.0-0.2	1.9-2.0	0.0-0.2	0.0-0.2	1.4-1.5
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	16/09/2016	16/09/2016	16/09/2016	16/09/2016	16/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	18	5	3	7	2
Copper	mg/kg	9	4	3	10	3
Lead	mg/kg	9	4	2	6	4
Mercury	mg/kg	1.3	<0.1	0.2	<0.1	<0.1
Nickel	mg/kg	4	<1	<1	6	<1
Zinc	mg/kg	19	7	3	44	4
Manganese	mg/kg	200	16	30	730	8

Acid Extractable metals in soil						
Our Reference:	UNITS	153754-14	153754-15	153754-16	153754-17	153754-19
Your Reference	----------	TP9	TP9	TP9	TP10	TP10
	-					
Depth	----------	0.4-0.5	1.4-1.5	2.4-2.5	0.9-1.0	2.4-2.5
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	16/09/2016	16/09/2016	16/09/2016	16/09/2016	16/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Arsenic	mg/kg	12	10	<4	5	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	17	10	3	13	13
Copper	mg/kg	10	16	12	3	3
Lead	mg/kg	57	68	11	22	20
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	2	<1	<1	1
Zinc	mg/kg	79	70	10	27	26
Manganese	mg/kg	34	41	36	16	26

Acid Extractable metals in soil						
Our Reference:	UNITS	153754-20	153754-21	153754-22	153754-23	153754-24
Your Reference	----------	TP10	TP11	TP11	TP11	TP12
	-					
Depth	----------	3.4-3.5	0.4-0.5	1.4-1.5	3.4-3.5	0.4-0.5
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	16/09/2016	16/09/2016	16/09/2016	16/09/2016	16/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Arsenic	mg/kg	<4	<4	<4	16	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	9	10	7	12	13
Copper	mg/kg	8	210	6	5	14
Lead	mg/kg	30	16	39	19	35
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	2	2	3	10
Zinc	mg/kg	30	84	28	26	24
Manganese	mg/kg	43	9	70	34	78

Acid Extractable metals in soil						
Our Reference:	UNITS	153754-25	153754-26	153754-27	153754-28	153754-29
Your Reference	---------- -	TP12	TP12	TP13	TP14	TP14
Depth	----------	0.9-1.0	2.9-3.0	0.0-0.2	0.4-0.5	1.9-2.0
Date Sampled		13/09/2016	13/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	16/09/2016	16/09/2016	16/09/2016	16/09/2016	16/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Arsenic	mg/kg	5	16	5	5	22
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	10	16	15	8	18
Copper	mg/kg	6	5	3	29	28
Lead	mg/kg	27	27	17	630	820
Mercury	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	1	3	<1	3	5
Zinc	mg/kg	62	36	14	110	170
Manganese	mg/kg	22	40	13	38	130

Acid Extractable metals in soil						
Our Reference:	UNITS	153754-30	153754-31	153754-32	153754-33	153754-34
Your Reference	---------- -	TP14	TP15	TP16	BH17	BH18
Depth	----------	2.9-3.0	0.6-0.7	0.4-0.5	0.4-0.5	0.4-0.5
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	16/09/2016	16/09/2016	16/09/2016	16/09/2016	16/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Arsenic	mg/kg	17	<4	13	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	33	5	18	2	4
Copper	mg/kg	<1	10	6	3	1
Lead	mg/kg	5	5	53	2	3
Mercury	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Nickel	mg/kg	<1	3	1	<1	1
Zinc	mg/kg	9	23	47	5	5
Manganese	mg/kg	3	94	23	41	18

Acid Extractable metals in soil						
Our Reference:	UNITS	153754-35	153754-36	153754-37	153754-38	153754-39
Your Reference	---------- -	BH19	BH19	BH20	BH21	BH22
Depth	----------	0.0-0.2	0.55-0.65	0.0-0.2	0.4-0.5	0.0-0.2
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	16/09/2016	16/09/2016	16/09/2016	16/09/2016	16/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Arsenic	mg/kg	<4	5	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	12	20	10	2	12
Copper	mg/kg	7	1	7	<1	6
Lead	mg/kg	9	7	9	2	8
Mercury	mg/kg	0.8	<0.1	0.4	<0.1	0.5
Nickel	mg/kg	5	1	6	<1	5
Zinc	mg/kg	20	28	26	5	19
Manganese	mg/kg	250	9	340	16	290

Acid Extractable metals in soil						
Our Reference:	UNITS	153754-42	153754-43	153754-44	153754-45	153754-54
Your Reference	---------- -	BD3/130916	BD4	BD5	BD6	TP1 - [TRIPLICATE]
Depth	----------	-	-	-	-	0.4-0.5
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	16/09/2016	16/09/2016	16/09/2016	16/09/2016	16/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Arsenic	mg/kg	5	7	<4	10	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	14	9	8	13	5
Copper	mg/kg	8	8	5	13	4
Lead	mg/kg	15	30	31	92	5
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	1	2	3	3	<1
Zinc	mg/kg	14	19	33	86	7
Manganese	mg/kg	12	33	110	37	3

Acid Extractable metals in soil			
Our Reference:	UNITS	153754-55	153754-57
Your Reference	----------	TP8B - [TRIPLICATE]	TP14 - [TRIPLICATE]
	-		
Depth	----------	1.4-1.5	2.9-3.0
Date Sampled		13/09/2016	14/09/2016
Type of sample		Soil	Soil
Date prepared	-	16/09/2016	16/09/2016
Date analysed	-	20/09/2016	20/09/2016
Arsenic	mg/kg	<4	<4
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	3	16
Copper	mg/kg	4	2
Lead	mg/kg	5	21
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	<1	<1
Zinc	mg/kg	5	10
Manganese	mg/kg	15	5

Moisture						
Our Reference:	UNITS	153754-1	153754-2	153754-3	153754-4	153754-5
Your Reference	----------	TP1	TP2	TP2	TP3	TP3
	-					
Depth	----------	0.4-0.5	0.4-0.5	0.5-0.36	0.0-0.2	0.5-0.36
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Moisture	%	11	2.7	13	9.8	10

Moisture						
Our Reference:	UNITS	153754-6	153754-7	153754-8	153754-9	153754-10
Your Reference	----------	TP4	TP5	TP5	TP5	TP6
	-					
Depth	----------	0.7-0.8	0.0-0.2	0.4-0.5	1.9-2.0	0.0-0.2
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Moisture	%	9.4	13	7.5	11	7.3

Moisture						
Our Reference:	UNITS	153754-11	153754-12	153754-13	153754-14	153754-15
Your Reference	----------	TP7A	TP8B	TP8B	TP9	TP9
	-					
Depth	----------	0.0-0.2	0.9-1.0	1.4-1.5	0.4-0.5	1.4-1.5
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Moisture	%	7.6	6.3	6.0	12	13

Moisture						
Our Reference:	UNITS	153754-16	153754-17	153754-18	153754-19	153754-20
Your Reference	----------	TP9	TP10	TP10	TP10	TP10
	-					
Depth	----------	2.4-2.5	0.9-1.0	1.4-1.5	2.4-2.5	3.4-3.5
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Moisture	%	14	10	8.7	13	8.1

Moisture						
Our Reference:	UNITS	153754-21	153754-22	153754-23	153754-24	153754-25
Your Reference	---------- -	TP11	TP11	TP11	TP12	TP12
Depth	----------	0.4-0.5	1.4-1.5	3.4-3.5	0.4-0.5	0.9-1.0
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Moisture	%	11	10	15	12	17

Moisture						
Our Reference:	UNITS	153754-26	153754-27	153754-28	153754-29	153754-30
Your Reference	---------- -	TP12	TP13	TP14	TP14	TP14
Depth	----------	2.9-3.0	0.0-0.2	0.4-0.5	1.9-2.0	2.9-3.0
Date Sampled		13/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Moisture	%	11	17	19	17	15

Moisture						
Our Reference:	UNITS	153754-31	153754-32	153754-33	153754-34	153754-35
Your Reference	---------- -	TP15	TP16	BH17	BH18	BH19
Depth	----------	0.6-0.7	0.4-0.5	0.4-0.5	0.4-0.5	0.0-0.2
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Moisture	%	11	11	8.4	5.8	11

Moisture						
Our Reference:	UNITS	153754-36	153754-37	153754-38	153754-39	153754-41
Your Reference	---------- -	BH19	BH20	BH21	BH22	Blank
Depth	----------	0.55-0.65	0.0-0.2	0.4-0.5	0.0-0.2	-
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Moisture	%	13	12	11	11	0.3

Moisture Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	153754-42 BD3/130916 - 14/09/2016 Soil	153754-43 BD4 - 14/09/2016 Soil	153754-44 BD5 - 14/09/2016 Soil	153754-45 BD6 - 14/09/2016 Soil
Date prepared	-	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Moisture	%	16	17	10	13

Asbestos ID - soils						
Our Reference:	UNITS	153754-1	153754-3	153754-4	153754-5	153754-6
Your Reference	---------- -	TP1	TP2	TP3	TP3	TP4
Depth	----------	0.4-0.5	0.5-0.36	0.0-0.2	0.5-0.36	0.7-0.8
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Sample mass tested	g	Approx 40g	Approx 40g	Approx 40g	Approx 35g	Approx 40g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	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	153754-7	153754-9	153754-10	153754-11	153754-13
Your Reference	---------- -	TP5	TP5	TP6	TP7A	TP8B
Depth	----------	0.0-0.2	1.9-2.0	0.0-0.2	0.0-0.2	1.4-1.5
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Sample mass tested	g	Approx 35g	Approx 40g	Approx 40g	a[p 45g	Approx 40g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	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	153754-14	153754-15	153754-16	153754-17	153754-19
Your Reference	---------- -	TP9	TP9	TP9	TP10	TP10
Depth	----------	0.4-0.5	1.4-1.5	2.4-2.5	0.9-1.0	2.4-2.5
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Sample mass tested	g	Approx 35g	Approx 40g	Approx 35g	Approx 40g	Approx 35g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	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	153754-20	153754-21	153754-22	153754-23	153754-24
Your Reference	---------- -	TP10	TP11	TP11	TP11	TP12
Depth	----------	3.4-3.5	0.4-0.5	1.4-1.5	3.4-3.5	0.4-0.5
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Sample mass tested	g	Approx 35g	Approx 35g	Approx 40g	Approx 35g	Approx 35g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	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	153754-25	153754-26	153754-27	153754-28	153754-29
Your Reference	---------- -	TP12	TP12	TP13	TP14	TP14
Depth	----------	0.9-1.0	2.9-3.0	0.0-0.2	0.4-0.5	1.9-2.0
Date Sampled		13/09/2016	13/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Sample mass tested	g	Approx 40g	Approx 35g	Approx 40g	Approx 30g	Approx 35g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	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	153754-30	153754-31	153754-32	153754-33	153754-34
Your Reference	---------- -	TP14	TP15	TP16	BH17	BH18
Depth	----------	2.9-3.0	0.6-0.7	0.4-0.5	0.4-0.5	0.4-0.5
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Sample mass tested	g	Approx 35g	Approx 35g	Approx 35g	Approx 40g	Approx 40g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference:	UNITS	153754-35	153754-36	153754-37	153754-38	153754-39
Your Reference	---------- -	BH19	BH19	BH20	BH21	BH22
Depth	----------	0.0-0.2	0.55-0.65	0.0-0.2	0.4-0.5	0.0-0.2
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Sample mass tested	g	Approx 35g	Approx 35g	Approx 35g	Approx 40g	Approx 35g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown sandy soil & rocks	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

Misc Soil - Inorg						
Our Reference:	UNITS	153754-1	153754-3	153754-4	153754-6	153754-9
Your Reference	---------- -	TP1	TP2	TP3	TP4	TP5
Depth	----------	0.4-0.5	0.5-0.36	0.0-0.2	0.7-0.8	1.9-2.0
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/09/2016	26/09/2016	26/09/2016	26/09/2016	26/09/2016
Date analysed	-	26/09/2016	26/09/2016	26/09/2016	26/09/2016	26/09/2016
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference:	UNITS	153754-10	153754-11	153754-13	153754-15	153754-19
Your Reference	---------- -	TP6	TP7A	TP8B	TP9	TP10
Depth	----------	0.0-0.2	0.0-0.2	1.4-1.5	1.4-1.5	2.4-2.5
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/09/2016	26/09/2016	26/09/2016	26/09/2016	26/09/2016
Date analysed	-	26/09/2016	26/09/2016	26/09/2016	26/09/2016	26/09/2016
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference:	UNITS	153754-20	153754-22	153754-23	153754-25	153754-26
Your Reference	---------- -	TP10	TP11	TP11	TP12	TP12
Depth	----------	3.4-3.5	1.4-1.5	3.4-3.5	0.9-1.0	2.9-3.0
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	13/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/09/2016	26/09/2016	26/09/2016	26/09/2016	26/09/2016
Date analysed	-	26/09/2016	26/09/2016	26/09/2016	26/09/2016	26/09/2016
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference:	UNITS	153754-27	153754-29	153754-31	153754-32	153754-33
Your Reference	---------- -	TP13	TP14	TP15	TP16	BH17
Depth	----------	0.0-0.2	1.9-2.0	0.6-0.7	0.4-0.5	0.4-0.5
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/09/2016	26/09/2016	26/09/2016	26/09/2016	26/09/2016
Date analysed	-	26/09/2016	26/09/2016	26/09/2016	26/09/2016	26/09/2016
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference:	UNITS	153754-34	153754-36	153754-37	153754-38	153754-39
Your Reference	---------- -	BH18	BH19	BH20	BH21	BH22
Depth	----------	0.4-0.5	0.55-0.65	0.0-0.2	0.4-0.5	0.0-0.2
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/09/2016	26/09/2016	26/09/2016	26/09/2016	26/09/2016
Date analysed	-	26/09/2016	26/09/2016	26/09/2016	26/09/2016	26/09/2016
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Inorg - Soil						
Our Reference:	UNITS	153754-15	153754-19	153754-21	153754-24	153754-29
Your Reference	---------- -	TP9	TP10	TP11	TP12	TP14
Depth	----------	1.4-1.5	2.4-2.5	0.4-0.5	0.4-0.5	1.9-2.0
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
pH 1:5 soil:water	pH Units	9.2	8.3	7.8	8.3	8.4

Misc Inorg - Soil		
Our Reference:	UNITS	153754-32
Your Reference	---------- -	TP16
Depth	----------	0.4-0.5
Date Sampled		14/09/2016
Type of sample		Soil
Date prepared	-	20/09/2016
Date analysed	-	20/09/2016
pH 1:5 soil:water	pH Units	8.2

CEC Our Reference: Your Reference	UNITS ----------	153754-15 TP9	153754-19 TP10	153754-21 TP11	153754-24 TP12	153754-29 TP14
	-					
Depth	----------	1.4-1.5	2.4-2.5	0.4-0.5	0.4-0.5	1.9-2.0
Date Sampled		13/09/2016	13/09/2016	13/09/2016	13/09/2016	14/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Date analysed	-	20/09/2016	20/09/2016	20/09/2016	20/09/2016	20/09/2016
Exchangeable Ca	meq/100g	8.6	18	3.8	10	22
Exchangeable K	meq/100g	0.1	0.2	0.2	0.2	0.3
Exchangeable Mg	meq/100g	0.78	0.88	0.44	1.2	0.79
Exchangeable Na	meq/100g	0.13	0.43	0.16	0.22	0.20
Cation Exchange Capacity	meq/100g	9.6	20	4.6	12	24

CEC Our Reference: Your Reference	UNITS ----------	153754-32 TP16
	-	
Depth	----------	0.4-0.5
Date Sampled		14/09/2016
Type of sample		Soil
Date prepared	-	20/09/2016
Date analysed	-	20/09/2016
Exchangeable Ca	meq/100g	7.3
Exchangeable K	meq/100g	0.1
Exchangeable Mg	meq/100g	0.67
Exchangeable Na	meq/100g	0.42
Cation Exchange Capacity	meq/100g	8.5

Asbestos ID - materials						
Our Reference:	UNITS	153754-46	153754-47	153754-48	153754-49	153754-50
Your Reference	---------- -	Asb 1	Asb 2	Asb 3	Asb 4	Asb 5
Depth	----------	-	-	-	-	-
Date Sampled		14/09/2016	14/09/2016	14/09/2016	14/09/2016	14/09/2016
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Mass / Dimension of Sample	-	30x30x3mm	120x40x5mm	130x110x5mm	80x45x3mm	62x40x5mm
Sample Description	-	Grey compressed fibre cement material	Beige compressed fibre cement material	Grey compressed fibre cement material	Beige compressed fibre cement material	Grey compressed fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected Amosite asbestos detected Crocidolite asbestos detected	Chrysotile asbestos detected Organic fibres detected	Chrysotile asbestos detected Amosite asbestos detected Crocidolite asbestos detected	Chrysotile asbestos detected Amosite asbestos detected	Chrysotile asbestos detected Amosite asbestos detected Crocidolite asbestos detected

Asbestos ID - materials				
Our Reference:	UNITS	153754-51	153754-52	153754-53
Your Reference	---------- -	Asb 6	Asb 7	Asb 8
Depth	----------	-	-	-
Date Sampled		14/09/2016	14/09/2016	14/09/2016
Type of sample		Material	Material	Material
Date analysed	-	22/09/2016	22/09/2016	22/09/2016
Mass / Dimension of Sample	-	94x40x5mm	75x45x5mm	45x45x5mm
Sample Description	-	Grey compressed fibre cement material	Grey compressed fibre cement material	Beige compressed fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected Amosite asbestos detected	Chrysotile asbestos detected Amosite asbestos detected	Chrysotile asbestos detected Organic fibres detected

Method ID	Methodology Summary
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012	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	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
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-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.
Metals-009	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-AES analytical finish.

QUALITY CONTROL VOCs in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			19/09/2016	153754-1	19/09/2016 || 19/09/2016	LCS-8	19/09/2016
Date analysed	-			21/09/2016	153754-1	21/09/2016 || 21/09/2016	LCS-8	21/09/2016
Dichlorodifluoromethane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
Chloromethane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
Vinyl Chloride	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
Bromomethane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
Chloroethane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
Trichlorofluoromethane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
1,1-Dichloroethene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
trans-1,2-dichloroethene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
1,1-dichloroethane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	LCS-8	98%
cis-1,2-dichloroethene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
bromochloromethane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
chloroform	mg/kg	1	Org-014	<1	153754-1	<1 || <1	LCS-8	109%
2,2-dichloropropane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
1,2-dichloroethane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	LCS-8	108%
1,1,1-trichloroethane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	LCS-8	98%
1,1-dichloropropene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
Cyclohexane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
carbon tetrachloride	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
Benzene	mg/kg	0.2	Org-014	<0.2	153754-1	<0.2 || <0.2	[NR]	[NR]
dibromomethane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
1,2-dichloropropane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
trichloroethene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	LCS-8	98%
bromodichloromethane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	LCS-8	92%
trans-1,3-dichloropropene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
cis-1,3-dichloropropene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
1,1,2-trichloroethane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
Toluene	mg/kg	0.5	Org-014	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
1,3-dichloropropane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
dibromochloromethane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	LCS-8	95%
1,2-dibromoethane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
tetrachloroethene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	LCS-8	101%
1,1,1,2-tetrachloroethane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
chlorobenzene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
Ethylbenzene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
bromoform	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
m+p-xylene	mg/kg	2	Org-014	<2	153754-1	<2 || <2	[NR]	[NR]
styrene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
o-Xylene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
1,2,3-trichloropropane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]

QUALITY CONTROL VOCs in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
isopropylbenzene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
bromobenzene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
n-propyl benzene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
2-chlorotoluene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
4-chlorotoluene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
1,3,5-trimethyl benzene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
tert-butyl benzene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
1,2,4-trimethyl benzene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
1,3-dichlorobenzene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
sec-butyl benzene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
1,4-dichlorobenzene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
4-isopropyl toluene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
1,2-dichlorobenzene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
n-butyl benzene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
1,2-dibromo-3-chloropropane	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
1,2,4-trichlorobenzene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
hexachlorobutadiene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
1,2,3-trichlorobenzene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
Surrogate Dibromofluorometha	%		Org-014	100	153754-1	100 || 98 || RPD: 2	LCS-8	93%
Surrogate aaa-Trifluorotoluene	%		Org-014	96	153754-1	91 || 91 || RPD: 0	LCS-8	99%
Surrogate Toluene-d_8	%		Org-014	100	153754-1	99 || 102 || RPD: 3	LCS-8	100%
Surrogate 4-Bromofluorobenzene	%		Org-014	103	153754-1	103 || 103 || RPD: 0	LCS-8	104%

QUALITY CONTROL SVOCs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			19/09/2016	153754-1	19/09/2016 || 19/09/2016	LCS-8	19/09/2016
Date analysed	-			21/09/2016	153754-1	21/09/2016 || 21/09/2016	LCS-8	21/09/2016
Phenol	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	LCS-8	102%
Bis-(2-chloroethyl) ether	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
2-Chlorophenol	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	LCS-8	100%
1,3-Dichlorobenzene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
1,4-Dichlorobenzene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	LCS-8	126%
2-Methylphenol	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
1,2-Dichlorobenzene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
Bis (2-chloroisopropyl) ether	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
3/4-Methylphenol	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
N-nitrosodi-n-propylamine	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
Hexachloroethane	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
Nitrobenzene	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
Isophorone	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
2,4-Dimethylphenol	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
2-Nitrophenol	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
Bis(2-chloroethoxy) methane	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
2,4-Dichlorophenol	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
1,2,4-Trichlorobenzene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
Naphthalene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
4-Chloroaniline	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
Hexachlorobutadiene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
4-Chloro-3-methylphenol	mg/kg	5	Org-012	<5	153754-1	<5 || <5	[NR]	[NR]
2-Methylnaphthalene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
Hexachlorocyclopentadiene	mg/kg	2	Org-012	<2	153754-1	<2 || <2	[NR]	[NR]
2,4,6-trichlorophenol	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
2,4,5-trichlorophenol	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
2-Chloronaphthalene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
2-nitroaniline	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
Dimethylphthalate	mg/kg	1	Org-012	<1	153754-1	<1 || <1	LCS-8	61%
2,6-Dinitrotoluene	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
Acenaphthylene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
3-Nitroaniline	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
Acenaphthene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	LCS-8	119%
2,4-dinitrophenol	mg/kg	10	Org-012	<10	153754-1	<10 || <10	[NR]	[NR]
4-nitrophenol	mg/kg	10	Org-012	<10	153754-1	<10 || <10	LCS-8	63%
Dibenzofuran	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
diethylphthalate	mg/kg	1	Org-012	<1	153754-1	<1 || <1	LCS-8	130%
4-chlorophenylphenylether	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]

QUALITY CONTROL SVOCs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
4-nitroaniline	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
Fluorene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
2-methyl-4,6-dinitrophenol	mg/kg	10	Org-012	<10	153754-1	<10 || <10	[NR]	[NR]
azobenzene	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
4-bromophenylphenylether	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
hexachlorobenzene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
pentachlorophenol	mg/kg	5	Org-012	<5	153754-1	<5 || <5	[NR]	[NR]
Phenanthrene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
Anthracene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
carbazole	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
di-n-butylphthalate	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
Fluoranthene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
Pyrene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	LCS-8	95%
butylbenzylphthalate	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
bis(2-ethylhexyl) phthalate	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
Benzo(a)anthracene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
Chrysene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
di-n-octylphthalate	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
Benzo(b+j+k) fluoranthene	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
ethylmethanesulfonate	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
aniline	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
pentachloroethane	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
benzyl alcohol	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
acetophenone	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
N-nitrosomorpholine	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
N-nitrosopiperidine	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
2,6-dichlorophenol	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
hexachloropropene-1	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
N-nitroso-n-butylamine	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
safrole	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
1,2,4,5-tetrachlorobenzene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
cis and trans iso-safrole	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
1,3-dinitrobenzene	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
pentachlorobenzene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
1-naphthylamine	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
2,3,4,6-tetrachlorophenol	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
2-naphthylamine	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
5-nitro-o-toluidine	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]

QUALITY CONTROL SVOCs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
diphenylamine	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
phenacetin	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
pentachloronitrobenzene	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
dinoseb	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
methapyrilene	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
p-dimethylaminoazobenzene	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
2-acetylaminofluorene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
7,12-dimethylbenz(a) anthracene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
3-methylcholanthrene	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
a-BHC	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
b-BHC	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
g-BHC	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
d-BHC	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
Heptachlor	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
Aldrin	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	LCS-8	76%
Heptachlor Epoxide	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
g-Chlordane	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
a-Chlordane	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
Endosulfan I	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
p,p'-DDE	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
Dieldrin	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	LCS-8	72%
Endrin	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
p,p'-DDD	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
Endosulfan II	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
p,p'-DDT	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
Endrin Ketone	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.5	Org-012	<0.5	153754-1	<0.5 || <0.5	[NR]	[NR]
Methoxychlor	mg/kg	1	Org-012	<1	153754-1	<1 || <1	[NR]	[NR]
Surrogate 2-fluorophenol	%		Org-012	74	153754-1	73 || 75 || RPD: 3	LCS-8	68%
Surrogate Phenol-d_6	%		Org-012	74	153754-1	68 || 70 || RPD: 3	LCS-8	70%
Surrogate Nitrobenzene-d_5	%		Org-012	79	153754-1	68 || 70 || RPD: 3	LCS-8	70%
Surrogate 2-fluorobiphenyl	%		Org-012	76	153754-1	69 || 72 || RPD: 4	LCS-8	70%
Surrogate 2,4,6-Tribromophenol	%		Org-012	115	153754-1	108 || 112 || RPD: 4	LCS-8	110%
Surrogate p-Terphenyl-d_{14}	%		Org-012	84	153754-1	104 || 106 || RPD: 2	LCS-8	62%

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			19/09/2016	153754-1	19/09/2016 || 19/09/2016	LCS-8	19/09/2016
Date analysed	-			21/09/2016	153754-1	21/09/2016 || 21/09/2016	LCS-8	21/09/2016
TRHC$_6$ - C$_9$	mg/kg	25	Org-016	<25	153754-1	<25 || <25	LCS-8	112%
TRHC$_6$ - C$_{10}$	mg/kg	25	Org-016	<25	153754-1	<25 || <25	LCS-8	112%
Benzene	mg/kg	0.2	Org-016	<0.2	153754-1	<0.2 || <0.2	LCS-8	104%
Toluene	mg/kg	0.5	Org-016	<0.5	153754-1	<0.5 || <0.5	LCS-8	108%
Ethylbenzene	mg/kg	1	Org-016	<1	153754-1	<1 || <1	LCS-8	114%
m+p-xylene	mg/kg	2	Org-016	<2	153754-1	<2 || <2	LCS-8	118%
o-Xylene	mg/kg	1	Org-016	<1	153754-1	<1 || <1	LCS-8	120%
naphthalene	mg/kg	1	Org-014	<1	153754-1	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	96	153754-1	91 || 91 || RPD: 0	LCS-8	99%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			19/09/2040	153754-1	19/09/2016 || 19/09/2016	LCS-8	19/09/2016
Date analysed	-			21/09/2016	153754-1	20/09/2016 || 20/09/2016	LCS-8	20/09/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	50	Org-003	<50	153754-1	<50 || <50	LCS-8	112%
TRHC$_{15}$ - C$_{28}$	mg/kg	100	Org-003	<100	153754-1	<100 || <100	LCS-8	108%
TRHC$_{29}$ - C$_{36}$	mg/kg	100	Org-003	<100	153754-1	<100 || <100	LCS-8	96%
TRH>C$_{10}$-C$_{16}$	mg/kg	50	Org-003	<50	153754-1	<50 || <50	LCS-8	112%
TRH>C$_{16}$-C$_{34}$	mg/kg	100	Org-003	<100	153754-1	<100 || <100	LCS-8	108%
TRH>C$_{34}$-C$_{40}$	mg/kg	100	Org-003	<100	153754-1	<100 || <100	LCS-8	96%
Surrogate o-Terphenyl	%		Org-003	77	153754-1	66 || 80 || RPD: 19	LCS-8	92%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			19/09/2016	153754-1	19/09/2016 || 19/09/2016	LCS-8	19/09/2016
Date analysed	-			20/09/2016	153754-1	20/09/2016 || 20/09/2016	LCS-8	20/09/2016
Naphthalene	mg/kg	0.1	Org-012	<0.1	153754-1	<0.1 || <0.1	LCS-8	95%
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012	<0.1	153754-1	<0.1 || <0.1	LCS-8	124%
Phenanthrene	mg/kg	0.1	Org-012	<0.1	153754-1	<0.1 || <0.1	LCS-8	106%
Anthracene	mg/kg	0.1	Org-012	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	153754-1	<0.1 || <0.1	LCS-8	98%
Pyrene	mg/kg	0.1	Org-012	<0.1	153754-1	<0.1 || <0.1	LCS-8	100%
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Benzo(b,j+k) fluoranthene	mg/kg	0.2	Org-012	<0.2	153754-1	<0.2 || <0.2	[NR]	[NR]

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	153754-1	<0.05 || <0.05	LCS-8	109%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	100	153754-1	95 || 97 || RPD: 2	LCS-8	111%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			19/09/2016	153754-1	16/09/2016 || 16/09/2016	LCS-8	16/09/2016
Date analysed	-			21/09/2016	153754-1	21/09/2016 || 21/09/2016	LCS-8	21/09/2016
HCB	mg/kg	0.1	Org-005	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	153754-1	<0.1 || <0.1	LCS-8	93%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	153754-1	<0.1 || <0.1	LCS-8	92%
Heptachlor	mg/kg	0.1	Org-005	<0.1	153754-1	<0.1 || <0.1	LCS-8	96%
delta-BHC	mg/kg	0.1	Org-005	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	153754-1	<0.1 || <0.1	LCS-8	95%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	153754-1	<0.1 || <0.1	LCS-8	96%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	153754-1	<0.1 || <0.1	LCS-8	93%
Dieldrin	mg/kg	0.1	Org-005	<0.1	153754-1	<0.1 || <0.1	LCS-8	97%
Endrin	mg/kg	0.1	Org-005	<0.1	153754-1	<0.1 || <0.1	LCS-8	94%
pp-DDD	mg/kg	0.1	Org-005	<0.1	153754-1	<0.1 || <0.1	LCS-8	89%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	153754-1	<0.1 || <0.1	LCS-8	86%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-005	101	153754-1	91 || 93 || RPD: 2	LCS-8	116%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			19/09/2016	153754-1	16/09/2016 || 16/09/2016	LCS-8	16/09/2016
Date analysed	-			21/09/2016	153754-1	21/09/2016 || 21/09/2016	LCS-8	21/09/2016
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	153754-1	<0.1 || <0.1	LCS-8	92%
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Diazinon	mg/kg	0.1	Org-008	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	153754-1	<0.1 || <0.1	LCS-8	96%
Dimethoate	mg/kg	0.1	Org-008	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	153754-1	<0.1 || <0.1	LCS-8	97%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	153754-1	<0.1 || <0.1	LCS-8	105%
Malathion	mg/kg	0.1	Org-008	<0.1	153754-1	<0.1 || <0.1	LCS-8	82%
Parathion	mg/kg	0.1	Org-008	<0.1	153754-1	<0.1 || <0.1	LCS-8	109%
Ronnel	mg/kg	0.1	Org-008	<0.1	153754-1	<0.1 || <0.1	LCS-8	98%
Surrogate TCMX	%		Org-008	101	153754-1	91 || 93 || RPD: 2	LCS-8	98%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			19/09/2016	153754-1	16/09/2016 || 16/09/2016	LCS-8	16/09/2016
Date analysed	-			21/09/2016	153754-1	21/09/2016 || 21/09/2016	LCS-8	21/09/2016
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	153754-1	<0.1 || <0.1	LCS-8	101%
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	153754-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	101	153754-1	91 || 93 || RPD: 2	LCS-8	98%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			16/09/2016	153754-1	16/09/2016 || 16/09/2016	LCS-8	16/09/2016
Date analysed	-			20/09/2016	153754-1	20/09/2016 || 20/09/2016	LCS-8	20/09/2016
Arsenic	mg/kg	4	Metals-020	<4	153754-1	<4 || 5	LCS-8	114%
Cadmium	mg/kg	0.4	Metals-020	<0.4	153754-1	<0.4 || <0.4	LCS-8	106%
Chromium	mg/kg	1	Metals-020	<1	153754-1	5 || 10 || RPD: 67	LCS-8	112%
Copper	mg/kg	1	Metals-020	<1	153754-1	3 || 6 || RPD: 67	LCS-8	115%
Lead	mg/kg	1	Metals-020	<1	153754-1	4 || 7 || RPD: 55	LCS-8	109%
Mercury	mg/kg	0.1	Metals-021	<0.1	153754-1	<0.1 || <0.1	LCS-8	90%
Nickel	mg/kg	1	Metals-020	<1	153754-1	<1 || 1	LCS-8	105%
Zinc	mg/kg	1	Metals-020	<1	153754-1	6 || 11 || RPD: 59	LCS-8	106%
Manganese	mg/kg	1	Metals-020	<1	153754-1	4 || 5 || RPD: 22	LCS-8	112%
QUALITY CONTROL Misc Soil - Inorg	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			26/09/2016	153754-1	26/09/2016 || 26/09/2016	LCS-8	26/09/2016
Date analysed	-			26/09/2016	153754-1	26/09/2016 || 26/09/2016	LCS-8	26/09/2016
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	153754-1	<5 || <5	LCS-8	88%
QUALITY CONTROL Misc Inorg - Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			20/09/2016	[NT]	[NT]	LCS-8	20/09/2016
Date analysed	-			20/09/2016	[NT]	[NT]	LCS-8	20/09/2016
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	[NT]	[NT]	LCS-8	100%
QUALITY CONTROL CEC	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			20/09/2016	[NT]	[NT]	LCS-2	20/09/2016
Date analysed	-			20/09/2016	[NT]	[NT]	LCS-2	20/09/2016
Exchangeable Ca	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	LCS-2	109%
Exchangeable K	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	LCS-2	112%
Exchangeable Mg	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	LCS-2	107%
Exchangeable Na	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	LCS-2	104%

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	153754-13	19/09/2016 || 19/09/2016	LCS-9	19/09/2016
Date analysed	-	153754-13	20/09/2016 || 20/09/2016	LCS-9	20/09/2016
TRHC$_6$ - C$_9$	mg/kg	153754-13	<25 || <25	LCS-9	97%
TRHC$_6$ - C$_{10}$	mg/kg	153754-13	<25 || <25	LCS-9	97%
Benzene	mg/kg	153754-13	<0.2 || <0.2	LCS-9	94%
Toluene	mg/kg	153754-13	<0.5 || <0.5	LCS-9	95%
Ethylbenzene	mg/kg	153754-13	<1 || <1	LCS-9	96%
m+p-xylene	mg/kg	153754-13	<2 || <2	LCS-9	99%
o-Xylene	mg/kg	153754-13	<1 || <1	LCS-9	87%
naphthalene	mg/kg	153754-13	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%	153754-13	108 || 97 || RPD: 11	LCS-9	96%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	153754-13	19/09/2016 || 19/09/2016	LCS-9	19/09/2042
Date analysed	-	153754-13	20/09/2016 || 20/09/2016	LCS-9	21/09/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	153754-13	<50 || <50	LCS-9	112%
TRHC$_{15}$ - C$_{28}$	mg/kg	153754-13	<100 || <100	LCS-9	109%
TRHC$_{29}$ - C$_{36}$	mg/kg	153754-13	<100 || <100	LCS-9	96%
TRH>C$_{10}$-C$_{16}$	mg/kg	153754-13	<50 || <50	LCS-9	112%
TRH>C$_{16}$-C$_{34}$	mg/kg	153754-13	<100 || <100	LCS-9	109%
TRH>C$_{34}$-C$_{40}$	mg/kg	153754-13	<100 || <100	LCS-9	96%
Surrogate o-Terphenyl	%	153754-13	82 || 82 || RPD: 0	LCS-9	91%

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	153754-13	19/09/2016 || 19/09/2016	LCS-9	19/09/2016
Date analysed	-	153754-13	20/09/2016 || 20/09/2016	LCS-9	20/09/2016
Naphthalene	mg/kg	153754-13	<0.1 || <0.1	LCS-9	95%
Acenaphthylene	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	153754-13	<0.1 || <0.1	LCS-9	123%
Phenanthrene	mg/kg	153754-13	<0.1 || <0.1	LCS-9	106%
Anthracene	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	153754-13	<0.1 || <0.1	LCS-9	98%
Pyrene	mg/kg	153754-13	<0.1 || <0.1	LCS-9	99%
Benzo(a)anthracene	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Benzo(b,j+k)fluoranthene	mg/kg	153754-13	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	153754-13	<0.05 || <0.05	LCS-9	109%
Indeno(1,2,3-c,d)pyrene	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	153754-13	<0.1 || <0.1	[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	153754-13	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	153754-13	89 || 89 || RPD: 0	LCS-9	111%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	153754-13	16/09/2016 || 16/09/2016	LCS-9	19/09/2016
Date analysed	-	153754-13	21/09/2016 || 21/09/2016	LCS-9	21/09/2016
HCB	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	153754-13	<0.1 || <0.1	LCS-9	89%
gamma-BHC	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	153754-13	<0.1 || <0.1	LCS-9	93%
Heptachlor	mg/kg	153754-13	<0.1 || <0.1	LCS-9	90%
delta-BHC	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	153754-13	<0.1 || <0.1	LCS-9	97%
Heptachlor Epoxide	mg/kg	153754-13	<0.1 || <0.1	LCS-9	97%
gamma-Chlordane	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	153754-13	<0.1 || <0.1	LCS-9	96%
Dieldrin	mg/kg	153754-13	<0.1 || <0.1	LCS-9	99%
Endrin	mg/kg	153754-13	<0.1 || <0.1	LCS-9	93%
pp-DDD	mg/kg	153754-13	<0.1 || <0.1	LCS-9	88%
Endosulfan II	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	153754-13	<0.1 || <0.1	LCS-9	77%
Methoxychlor	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%	153754-13	95 || 94 || RPD: 1	LCS-9	116%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	153754-13	16/09/2016 || 16/09/2016	LCS-9	19/09/2016
Date analysed	-	153754-13	21/09/2016 || 21/09/2016	LCS-9	21/09/2016
Azinphos-methyl (Guthion)	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Bromophos-ethyl	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	153754-13	<0.1 || <0.1	LCS-9	87%
Chlorpyriphos-methyl	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Diazinon	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Dichlorvos	mg/kg	153754-13	<0.1 || <0.1	LCS-9	90%
Dimethoate	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	153754-13	<0.1 || <0.1	LCS-9	90%
Fenitrothion	mg/kg	153754-13	<0.1 || <0.1	LCS-9	94%
Malathion	mg/kg	153754-13	<0.1 || <0.1	LCS-9	79%
Parathion	mg/kg	153754-13	<0.1 || <0.1	LCS-9	117%
Ronnel	mg/kg	153754-13	<0.1 || <0.1	LCS-9	93%
Surrogate TCMX	%	153754-13	95 || 94 || RPD: 1	LCS-9	99%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	153754-13	16/09/2016 || 16/09/2016	LCS-9	19/09/2016
Date analysed	-	153754-13	21/09/2016 || 21/09/2016	LCS-9	21/09/2016
Aroclor 1016	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	153754-13	<0.1 || <0.1	LCS-9	101%
Aroclor 1260	mg/kg	153754-13	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	153754-13	95 || 94 || RPD: 1	LCS-9	99%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	153754-13	16/09/2016 || 16/09/2016	LCS-9	16/09/2016
Date analysed	-	153754-13	20/09/2016 || 20/09/2016	LCS-9	20/09/2016
Arsenic	mg/kg	153754-13	<4 || 6	LCS-9	115%
Cadmium	mg/kg	153754-13	<0.4 || <0.4	LCS-9	108%
Chromium	mg/kg	153754-13	2 || 4 || RPD: 67	LCS-9	114%
Copper	mg/kg	153754-13	3 || 7 || RPD: 80	LCS-9	116%
Lead	mg/kg	153754-13	4 || 7 || RPD: 55	LCS-9	112%
Mercury	mg/kg	153754-13	<0.1 || <0.1	LCS-9	79%
Nickel	mg/kg	153754-13	<1 || 1	LCS-9	106%
Zinc	mg/kg	153754-13	4 || 7 || RPD: 55	LCS-9	108%
Manganese	mg/kg	153754-13	8 || 34 || RPD: 124	LCS-9	114%

QUALITY CONTROL Misc Soil - Inorg	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	LCS-9	26/09/2016
Date analysed	-	[NT]	[NT]	LCS-9	26/09/2016
Total Phenolics (as Phenol)	mg/kg	[NT]	[NT]	LCS-9	89%
QUALITY CONTROL VOCs in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	153754-15	19/09/2016
Date analysed	-	[NT]	[NT]	153754-15	21/09/2016
Dichlorodifluoromethane	mg/kg	[NT]	[NT]	[NR]	[NR]
Chloromethane	mg/kg	[NT]	[NT]	[NR]	[NR]
Vinyl Chloride	mg/kg	[NT]	[NT]	[NR]	[NR]
Bromomethane	mg/kg	[NT]	[NT]	[NR]	[NR]
Chloroethane	mg/kg	[NT]	[NT]	[NR]	[NR]
Trichlorofluoromethane	mg/kg	[NT]	[NT]	[NR]	[NR]
1,1-Dichloroethene	mg/kg	[NT]	[NT]	[NR]	[NR]
trans-1,2-dichloroethene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,1-dichloroethane	mg/kg	[NT]	[NT]	153754-15	98%
cis-1,2-dichloroethene	mg/kg	[NT]	[NT]	[NR]	[NR]
bromochloromethane	mg/kg	[NT]	[NT]	[NR]	[NR]
chloroform	mg/kg	[NT]	[NT]	153754-15	113%
2,2-dichloropropane	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2-dichloroethane	mg/kg	[NT]	[NT]	153754-15	110%
1,1,1-trichloroethane	mg/kg	[NT]	[NT]	153754-15	101%
1,1-dichloropropene	mg/kg	[NT]	[NT]	[NR]	[NR]
Cyclohexane	mg/kg	[NT]	[NT]	[NR]	[NR]
carbon tetrachloride	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
dibromomethane	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2-dichloropropane	mg/kg	[NT]	[NT]	[NR]	[NR]
trichloroethene	mg/kg	[NT]	[NT]	153754-15	101%
bromodichloromethane	mg/kg	[NT]	[NT]	153754-15	96%
trans-1,3-dichloropropene	mg/kg	[NT]	[NT]	[NR]	[NR]
cis-1,3-dichloropropene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,1,2-trichloroethane	mg/kg	[NT]	[NT]	[NR]	[NR]
Toluene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,3-dichloropropane	mg/kg	[NT]	[NT]	[NR]	[NR]
dibromochloromethane	mg/kg	[NT]	[NT]	153754-15	100%
1,2-dibromoethane	mg/kg	[NT]	[NT]	[NR]	[NR]
tetrachloroethene	mg/kg	[NT]	[NT]	153754-15	104%
1,1,1,2-tetrachloroethane	mg/kg	[NT]	[NT]	[NR]	[NR]
chlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
Ethylbenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
bromoform	mg/kg	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL VOCs in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
m+p-xylene	mg/kg	[NT]	[NT]	[NR]	[NR]
styrene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,1,2,2-tetrachloroethane	mg/kg	[NT]	[NT]	[NR]	[NR]
o-Xylene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2,3-trichloropropane	mg/kg	[NT]	[NT]	[NR]	[NR]
isopropylbenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
bromobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
n-propyl benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
2-chlorotoluene	mg/kg	[NT]	[NT]	[NR]	[NR]
4-chlorotoluene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,3,5-trimethyl benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
tert-butyl benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2,4-trimethyl benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,3-dichlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
sec-butyl benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,4-dichlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
4-isopropyl toluene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2-dichlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
n-butyl benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2-dibromo-3-chloropropane	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2,4-trichlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
hexachlorobutadiene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2,3-trichlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluorometha	%	[NT]	[NT]	153754-15	94%
Surrogate aaa-Trifluorotoluene	%	[NT]	[NT]	153754-15	93%
Surrogate Toluene-d_8	%	[NT]	[NT]	153754-15	102%
Surrogate 4-Bromofluorobenzene	%	[NT]	[NT]	153754-15	103%

QUALITY CONTROL SVOCs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	153754-15	19/09/2016
Date analysed	-	[NT]	[NT]	153754-15	21/09/2016
Phenol	mg/kg	[NT]	[NT]	153754-15	98%
Bis-(2-chloroethyl) ether	mg/kg	[NT]	[NT]	[NR]	[NR]
2-Chlorophenol	mg/kg	[NT]	[NT]	153754-15	98%
1,3-Dichlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,4-Dichlorobenzene	mg/kg	[NT]	[NT]	153754-15	118%
2-Methylphenol	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2-Dichlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
Bis (2-chloroisopropyl) ether	mg/kg	[NT]	[NT]	[NR]	[NR]
3/4-Methylphenol	mg/kg	[NT]	[NT]	[NR]	[NR]
N-nitrosodi-n-propylamine	mg/kg	[NT]	[NT]	[NR]	[NR]
Hexachloroethane	mg/kg	[NT]	[NT]	[NR]	[NR]
Nitrobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
Isophorone	mg/kg	[NT]	[NT]	[NR]	[NR]
2,4-Dimethylphenol	mg/kg	[NT]	[NT]	[NR]	[NR]
2-Nitrophenol	mg/kg	[NT]	[NT]	[NR]	[NR]
Bis(2-chloroethoxy) methane	mg/kg	[NT]	[NT]	[NR]	[NR]
2,4-Dichlorophenol	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2,4-Trichlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
Naphthalene	mg/kg	[NT]	[NT]	[NR]	[NR]
4-Chloroaniline	mg/kg	[NT]	[NT]	[NR]	[NR]
Hexachlorobutadiene	mg/kg	[NT]	[NT]	[NR]	[NR]
4-Chloro-3-methylphenol	mg/kg	[NT]	[NT]	[NR]	[NR]
2-Methylnaphthalene	mg/kg	[NT]	[NT]	[NR]	[NR]
Hexachlorocyclopentadiene	mg/kg	[NT]	[NT]	[NR]	[NR]
2,4,6-trichlorophenol	mg/kg	[NT]	[NT]	[NR]	[NR]
2,4,5-trichlorophenol	mg/kg	[NT]	[NT]	[NR]	[NR]
2-Chloronaphthalene	mg/kg	[NT]	[NT]	[NR]	[NR]
2-nitroaniline	mg/kg	[NT]	[NT]	[NR]	[NR]
Dimethylphthalate	mg/kg	[NT]	[NT]	153754-15	54%
2,6-Dinitrotoluene	mg/kg	[NT]	[NT]	[NR]	[NR]
Acenaphthylene	mg/kg	[NT]	[NT]	[NR]	[NR]
3-Nitroaniline	mg/kg	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	[NT]	[NT]	153754-15	123%
2,4-dinitrophenol	mg/kg	[NT]	[NT]	[NR]	[NR]
4-nitrophenol	mg/kg	[NT]	[NT]	153754-15	52%
Dibenzofuran	mg/kg	[NT]	[NT]	[NR]	[NR]
diethylphthalate	mg/kg	[NT]	[NT]	153754-15	113%
4-chlorophenylphenylether	mg/kg	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL SVOCs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
4-nitroaniline	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	[NT]	[NT]	[NR]	[NR]
2-methyl-4,6-dinitrophenol	mg/kg	[NT]	[NT]	[NR]	[NR]
azobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
4-bromophenylphenylether	mg/kg	[NT]	[NT]	[NR]	[NR]
hexachlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
pentachlorophenol	mg/kg	[NT]	[NT]	[NR]	[NR]
Phenanthrene	mg/kg	[NT]	[NT]	[NR]	[NR]
Anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
carbazole	mg/kg	[NT]	[NT]	[NR]	[NR]
di-n-butylphthalate	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Pyrene	mg/kg	[NT]	[NT]	153754-15	85%
butylbenzylphthalate	mg/kg	[NT]	[NT]	[NR]	[NR]
bis(2-ethylhexyl)phthalate	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(a)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	[NT]	[NT]	[NR]	[NR]
di-n-octylphthalate	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(b+j+k)fluoranthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	[NT]	[NT]	[NR]	[NR]
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]
ethylmethanesulfonate	mg/kg	[NT]	[NT]	[NR]	[NR]
aniline	mg/kg	[NT]	[NT]	[NR]	[NR]
pentachloroethane	mg/kg	[NT]	[NT]	[NR]	[NR]
benzyl alcohol	mg/kg	[NT]	[NT]	[NR]	[NR]
acetophenone	mg/kg	[NT]	[NT]	[NR]	[NR]
N-nitrosomorpholine	mg/kg	[NT]	[NT]	[NR]	[NR]
N-nitrosopiperidine	mg/kg	[NT]	[NT]	[NR]	[NR]
2,6-dichlorophenol	mg/kg	[NT]	[NT]	[NR]	[NR]
hexachloropropene-1	mg/kg	[NT]	[NT]	[NR]	[NR]
N-nitroso-n-butylamine	mg/kg	[NT]	[NT]	[NR]	[NR]
safrole	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2,4,5-tetrachlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
cis and trans iso-safrole	mg/kg	[NT]	[NT]	[NR]	[NR]
1,3-dinitrobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
pentachlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
1-naphthylamine	mg/kg	[NT]	[NT]	[NR]	[NR]
2,3,4,6-tetrachlorophenol	mg/kg	[NT]	[NT]	[NR]	[NR]
2-naphthylamine	mg/kg	[NT]	[NT]	[NR]	[NR]
5-nitro-o-toluidine	mg/kg	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL SVOCs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
diphenylamine	mg/kg	[NT]	[NT]	[NR]	[NR]
phenacetin	mg/kg	[NT]	[NT]	[NR]	[NR]
pentachloronitrobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
dinoseb	mg/kg	[NT]	[NT]	[NR]	[NR]
methapyrilene	mg/kg	[NT]	[NT]	[NR]	[NR]
p-dimethylaminoazobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
2-acetylaminofluorene	mg/kg	[NT]	[NT]	[NR]	[NR]
7,12-dimethylbenz(a) anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
3-methylcholanthrene	mg/kg	[NT]	[NT]	[NR]	[NR]
a-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
b-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
g-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
d-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Heptachlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	153754-15	85%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	[NR]	[NR]
g-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
a-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	[NT]	[NT]	[NR]	[NR]
p,p'-DDE	mg/kg	[NT]	[NT]	[NR]	[NR]
Dieldrin	mg/kg	[NT]	[NT]	153754-15	87%
Endrin	mg/kg	[NT]	[NT]	[NR]	[NR]
p,p'-DDD	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan II	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	[NT]	[NT]	[NR]	[NR]
p,p'-DDT	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Ketone	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	[NT]	[NT]	[NR]	[NR]
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate 2-fluorophenol	%	[NT]	[NT]	153754-15	69%
Surrogate Phenol-d_6	%	[NT]	[NT]	153754-15	53%
Surrogate Nitrobenzene-d_5	%	[NT]	[NT]	153754-15	66%
Surrogate 2-fluorobiphenyl	%	[NT]	[NT]	153754-15	71%
Surrogate 2,4,6-Tribromophenol	%	[NT]	[NT]	153754-15	115%
Surrogate p-Terphenyl-d_{14}	%	[NT]	[NT]	153754-15	55%

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	153754-22	19/09/2016 || 19/09/2016	153754-15	19/09/2016
Date analysed	-	153754-22	21/09/2016 || 20/09/2016	153754-15	21/09/2016
TRHC$_6$ - C$_9$	mg/kg	153754-22	<25 || <25	153754-15	114%
TRHC$_6$ - C$_{10}$	mg/kg	153754-22	<25 || <25	153754-15	114%
Benzene	mg/kg	153754-22	<0.2 || <0.2	153754-15	107%
Toluene	mg/kg	153754-22	<0.5 || <0.5	153754-15	111%
Ethylbenzene	mg/kg	153754-22	<1 || <1	153754-15	115%
m+p-xylene	mg/kg	153754-22	<2 || <2	153754-15	119%
o-Xylene	mg/kg	153754-22	<1 || <1	153754-15	122%
naphthalene	mg/kg	153754-22	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%	153754-22	82 || 87 || RPD: 6	153754-15	93%
QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	153754-22	19/09/2016 || 19/09/2016	153754-15	19/09/2032
Date analysed	-	153754-22	21/09/2016 || 21/09/2016	153754-15	20/09/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	153754-22	<50 || <50	153754-15	104%
TRHC$_{15}$ - C$_{28}$	mg/kg	153754-22	<100 || <100	153754-15	106%
TRHC$_{29}$ - C$_{36}$	mg/kg	153754-22	<100 || <100	153754-15	102%
TRH>C$_{10}$-C$_{16}$	mg/kg	153754-22	<50 || <50	153754-15	104%
TRH>C$_{16}$-C$_{34}$	mg/kg	153754-22	<100 || <100	153754-15	106%
TRH>C$_{34}$-C$_{40}$	mg/kg	153754-22	<100 || <100	153754-15	102%
Surrogate o-Terphenyl	%	153754-22	80 || 82 || RPD: 2	153754-15	81%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	153754-22	19/09/2016 || 19/09/2016	153754-15	19/09/2016
Date analysed	-	153754-22	20/09/2016 || 20/09/2016	153754-15	20/09/2016
Naphthalene	mg/kg	153754-22	<0.1 || <0.1	153754-15	89%
Acenaphthylene	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	153754-22	<0.1 || <0.1	153754-15	113%
Phenanthrene	mg/kg	153754-22	<0.1 || 0.1	153754-15	90%
Anthracene	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	153754-22	<0.1 || <0.1	153754-15	76%
Pyrene	mg/kg	153754-22	<0.1 || <0.1	153754-15	80%
Benzo(a)anthracene	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Benzo(b,j+k)fluoranthene	mg/kg	153754-22	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	153754-22	0.06 || <0.05	153754-15	84%
Indeno(1,2,3-c,d)pyrene	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	153754-22	<0.1 || <0.1	[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	153754-22	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	153754-22	90 || 91 || RPD: 1	153754-15	106%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	153754-22	16/09/2016 || 19/09/2016	153754-15	16/09/2016
Date analysed	-	153754-22	21/09/2016 || 21/09/2016	153754-15	21/09/2016
HCB	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	153754-22	<0.1 || <0.1	153754-15	97%
gamma-BHC	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	153754-22	<0.1 || <0.1	153754-15	92%
Heptachlor	mg/kg	153754-22	<0.1 || <0.1	153754-15	93%
delta-BHC	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	153754-22	<0.1 || <0.1	153754-15	94%
Heptachlor Epoxide	mg/kg	153754-22	<0.1 || <0.1	153754-15	94%
gamma-Chlordane	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	153754-22	<0.1 || <0.1	153754-15	94%
Dieldrin	mg/kg	153754-22	<0.1 || <0.1	153754-15	97%
Endrin	mg/kg	153754-22	<0.1 || <0.1	153754-15	93%
pp-DDD	mg/kg	153754-22	<0.1 || <0.1	153754-15	91%
Endosulfan II	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	153754-22	<0.1 || <0.1	153754-15	88%
Methoxychlor	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%	153754-22	93 || 95 || RPD: 2	153754-15	111%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	153754-22	16/09/2016 || 19/09/2016	153754-15	16/09/2016
Date analysed	-	153754-22	21/09/2016 || 21/09/2016	153754-15	21/09/2016
Azinphos-methyl (Guthion)	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Bromophos-ethyl	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	153754-22	<0.1 || <0.1	153754-15	88%
Chlorpyriphos-methyl	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Diazinon	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Dichlorvos	mg/kg	153754-22	<0.1 || <0.1	153754-15	89%
Dimethoate	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	153754-22	<0.1 || <0.1	153754-15	96%
Fenitrothion	mg/kg	153754-22	<0.1 || <0.1	153754-15	97%
Malathion	mg/kg	153754-22	<0.1 || <0.1	153754-15	85%
Parathion	mg/kg	153754-22	<0.1 || <0.1	153754-15	115%
Ronnel	mg/kg	153754-22	<0.1 || <0.1	153754-15	93%
Surrogate TCMX	%	153754-22	93 || 95 || RPD: 2	153754-15	92%

QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	153754-22	16/09/2016 || 19/09/2016	153754-15	16/09/2016
Date analysed	-	153754-22	21/09/2016 || 21/09/2016	153754-15	21/09/2016
Aroclor 1016	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	153754-22	<0.1 || <0.1	153754-15	98%
Aroclor 1260	mg/kg	153754-22	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	153754-22	93 || 95 || RPD: 2	153754-15	92%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	153754-22	16/09/2016 || 16/09/2016	153754-15	16/09/2016
Date analysed	-	153754-22	20/09/2016 || 20/09/2016	153754-15	20/09/2016
Arsenic	mg/kg	153754-22	<4 || <4	153754-15	95%
Cadmium	mg/kg	153754-22	<0.4 || <0.4	153754-15	101%
Chromium	mg/kg	153754-22	7 || 7 || RPD: 0	153754-15	105%
Copper	mg/kg	153754-22	6 || 6 || RPD: 0	153754-15	101%
Lead	mg/kg	153754-22	39 || 28 || RPD: 33	153754-15	#
Mercury	mg/kg	153754-22	<0.1 || <0.1	153754-15	79%
Nickel	mg/kg	153754-22	2 || 2 || RPD: 0	153754-15	99%
Zinc	mg/kg	153754-22	28 || 27 || RPD: 4	153754-15	79%
Manganese	mg/kg	153754-22	70 || 87 || RPD: 22	153754-15	79%

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	153754-30	19/09/2016 || 19/09/2016	153754-26	19/09/2016
Date analysed	-	153754-30	21/09/2016 || 20/09/2016	153754-26	20/09/2016
TRHC$_6$ - C$_9$	mg/kg	153754-30	<25 || <25	153754-26	98%
TRHC$_6$ - C$_{10}$	mg/kg	153754-30	<25 || <25	153754-26	98%
Benzene	mg/kg	153754-30	<0.2 || <0.2	153754-26	93%
Toluene	mg/kg	153754-30	<0.5 || <0.5	153754-26	96%
Ethylbenzene	mg/kg	153754-30	<1 || <1	153754-26	99%
m+p-xylene	mg/kg	153754-30	<2 || <2	153754-26	101%
o-Xylene	mg/kg	153754-30	<1 || <1	153754-26	90%
naphthalene	mg/kg	153754-30	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%	153754-30	79 || 102 || RPD: 25	153754-26	99%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	153754-30	19/09/2016 || 19/09/2016	153754-26	19/09/2050
Date analysed	-	153754-30	21/09/2016 || 21/09/2016	153754-26	21/09/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	153754-30	<50 || <50	153754-26	108%
TRHC$_{15}$ - C$_{28}$	mg/kg	153754-30	<100 || <100	153754-26	104%
TRHC$_{29}$ - C$_{36}$	mg/kg	153754-30	<100 || <100	153754-26	88%
TRH>C$_{10}$-C$_{16}$	mg/kg	153754-30	<50 || <50	153754-26	108%
TRH>C$_{16}$-C$_{34}$	mg/kg	153754-30	<100 || <100	153754-26	104%
TRH>C$_{34}$-C$_{40}$	mg/kg	153754-30	<100 || <100	153754-26	88%
Surrogate o-Terphenyl	%	153754-30	80 || 79 || RPD: 1	153754-26	80%

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	153754-30	19/09/2016 || 19/09/2016	153754-26	19/09/2016
Date analysed	-	153754-30	20/09/2016 || 20/09/2016	153754-26	20/09/2016
Naphthalene	mg/kg	153754-30	<0.1 || <0.1	153754-26	86%
Acenaphthylene	mg/kg	153754-30	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	153754-30	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	153754-30	<0.1 || <0.1	153754-26	110%
Phenanthrene	mg/kg	153754-30	<0.1 || <0.1	153754-26	86%
Anthracene	mg/kg	153754-30	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	153754-30	<0.1 || <0.1	153754-26	80%
Pyrene	mg/kg	153754-30	<0.1 || <0.1	153754-26	87%
Benzo(a)anthracene	mg/kg	153754-30	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	153754-30	<0.1 || <0.1	[NR]	[NR]
Benzo(b,j+k)fluoranthene	mg/kg	153754-30	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	153754-30	<0.05 || <0.05	153754-26	92%
Indeno(1,2,3-c,d)pyrene	mg/kg	153754-30	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	153754-30	<0.1 || <0.1	[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	153754-30	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	153754-30	89 || 88 || RPD: 1	153754-26	101%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	153754-26	19/09/2016
Date analysed	-	[NT]	[NT]	153754-26	21/09/2016
HCB	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	[NT]	[NT]	153754-26	89%
gamma-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	[NT]	[NT]	153754-26	88%
Heptachlor	mg/kg	[NT]	[NT]	153754-26	87%
delta-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	153754-26	92%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	153754-26	92%
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]	153754-26	90%
Dieldrin	mg/kg	[NT]	[NT]	153754-26	94%
Endrin	mg/kg	[NT]	[NT]	153754-26	89%
pp-DDD	mg/kg	[NT]	[NT]	153754-26	85%
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]	153754-26	82%
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%	[NT]	[NT]	153754-26	110%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	153754-26	19/09/2016
Date analysed	-	[NT]	[NT]	153754-26	21/09/2016
Azinphos-methyl (Guthion)	mg/kg	[NT]	[NT]	[NR]	[NR]
Bromophos-ethyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Chlorpyriphos	mg/kg	[NT]	[NT]	153754-26	84%
Chlorpyriphos-methyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Diazinon	mg/kg	[NT]	[NT]	[NR]	[NR]
Dichlorvos	mg/kg	[NT]	[NT]	153754-26	102%
Dimethoate	mg/kg	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	[NT]	[NT]	153754-26	92%
Fenitrothion	mg/kg	[NT]	[NT]	153754-26	90%
Malathion	mg/kg	[NT]	[NT]	153754-26	76%
Parathion	mg/kg	[NT]	[NT]	153754-26	106%
Ronnel	mg/kg	[NT]	[NT]	153754-26	90%
Surrogate TCMX	%	[NT]	[NT]	153754-26	92%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	153754-26	19/09/2016
Date analysed	-	[NT]	[NT]	153754-26	21/09/2016
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]	153754-26	100%
Aroclor 1260	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	153754-26	92%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	153754-30	16/09/2016 || 16/09/2016	153754-26	16/09/2016
Date analysed	-	153754-30	20/09/2016 || 20/09/2016	153754-26	20/09/2016
Arsenic	mg/kg	153754-30	17 || <4	153754-26	80%
Cadmium	mg/kg	153754-30	<0.4 || <0.4	153754-26	101%
Chromium	mg/kg	153754-30	33 || 16 || RPD: 69	153754-26	90%
Copper	mg/kg	153754-30	<1 || 1	153754-26	120%
Lead	mg/kg	153754-30	5 || 10 || RPD: 67	153754-26	99%
Mercury	mg/kg	153754-30	<0.1 || <0.1	153754-26	82%
Nickel	mg/kg	153754-30	<1 || <1	153754-26	100%
Zinc	mg/kg	153754-30	9 || 7 || RPD: 25	153754-26	107%
Manganese	mg/kg	153754-30	3 || 3 || RPD: 0	153754-26	#

QUALITY CONTROL Misc Soil - Inorg	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	153754-3	26/09/2016
Date analysed	-	[NT]	[NT]	153754-3	26/09/2016
Total Phenolics (as Phenol)	mg/kg	[NT]	[NT]	153754-3	102%

QUALITY CONTROL CEC	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date prepared	-	153754-19	20/09/2016 || 20/09/2016
Date analysed	-	153754-19	20/09/2016 || 20/09/2016
Exchangeable Ca	meq/100 g	153754-19	18 || 16 || RPD: 12
Exchangeable K	meq/100 g	153754-19	0.2 || 0.3 || RPD: 40
Exchangeable Mg	meq/100 g	153754-19	0.88 || 0.98 || RPD: 11
Exchangeable Na	meq/100 g	153754-19	0.43 || 0.22 || RPD: 65

QUALITY CONTROL Misc Soil - Inorg	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	153754-20	26/09/2016 || 26/09/2016	153754-37	26/09/2016
Date analysed	-	153754-20	26/09/2016 || 26/09/2016	153754-37	26/09/2016
Total Phenolics (as Phenol)	mg/kg	153754-20	<5 || <5	153754-37	108%

QUALITY CONTROL Misc Soil - Inorg	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date prepared	-	153754-36	26/09/2016 || 26/09/2016
Date analysed	-	153754-36	26/09/2016 || 26/09/2016
Total Phenolics (as Phenol)	mg/kg	153754-36	<5 || <5

Report Comments:

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 153754-1 for Cr, Pb and Zn. Therefore a triplicate result has been issued as laboratory sample number 153754-54.

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 153754-13 for Zn, Mn. Therefore a triplicate result has been issued as laboratory sample number 153754-55.

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 153754-30 for Cr and Zn. Therefore a triplicate result has been issued as laboratory sample number 153754-57.

METALS_S: # Percent recovery is not possible to report due to the inhomogeneous nature of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

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 for asbestos testing were sub-sampled from jars provided by the client.

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

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NR: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

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

Measurement Uncertainty estimates are available for most tests upon request.

CHAIN OF CUSTODY

Douglas Partners
Geotechnics | Environment | Groundwater

Client:	Douglas Partners	**Project Number**	73308.02
Contact Person:	Michael Whittaker	**Project Name:**	Oatley
Project Mgr:	Kate Sargent	**PO No.:**	
		lab Quote No. :	
Address:	96 Hermitage Road West Ryde NSW 2114	**Date results required:**	
		Or choose:	standard
		Note: Inform lab in advance if urgent turnaround is required - surcharges apply	
Phone:	9809 0666 **Mob:** 0447 282 095	**Report format:**	esdat / PDF / Excel
Email:	michael.whittaker@douglaspartners.com.au kate.sargent@douglaspartners.com.au	**Comments:**	

To:	Envirolab Services		
Contact Person:	Aileen Hie		
Address:	12 Ashley Street Chatswood NSW 2068		
Phone:	02 9910 6200		
Fax:	02 9910 6201		
Email:	ahie@envirolab.com.au		
Laboratory Report No:			
Lab Comments:			

Sample information						Tests Required											Comments
Lab Sample ID	**Field Sample ID**	**Depth**	**Date sampled**	**Container Type**	**Type of sample**	Combo 8a	Combo 3a	VOC/SVOC (including cresote)	pH/CEC							**Combo**	**Provide as much information about the sample as you can**
1	TP1	0.4-0.5	13/9	Jar	Soil	X		X									
2	TP2	0.4-0.5	13/9	Jar	Soil			X									
3	TP2	0.5-0.6	13/9	Jar	Soil	X											
4	TP3	0.0-0.2	13/9	Jar	Soil	X											
5	TP3	0.5-0.6	13/9	Jar	Soil		X	X									
6	TP4	0.7-0.8	13/9	Jar	Soil	X											
7	TP5	0.0-0.2	13/9	Jar	Soil		X										
8	TP5	0.4-0.5	13/9	Jar	Soil			X									
9	TP5	1.9-2.0	13/9	Jar	Soil	X											
10	TP6	0.0-0.2	13/9	Jar	Soil	X											
11	TP7A	0.0-0.2	13/9	Jar	Soil	X											
12	TP8B	0.9-1.0	13/9	Jar	Soil			X									
13	TP8B	1.4-1.5	13/9	Jar	Soil	X											
14	TP9	0.4-0.5	13/9	Jar	Soil		X										
15	TP9	1.4-1.5	13/9	Jar	Soil	X		X	X								
16	TP9	2.4-2.5	13/9	Jar	Soil		X										
17	TP10	0.9-1.0	13/9	Jar	Soil		X										
18	TP10	1.4-1.5	13/9	Jar	Soil			X									
19	TP10	2.4-2.5	13/9	Jar	Soil	X		X	X								
20	TP10	3.4-3.5	13/9	Jar	Soil	X											
21	TP11	0.4-0.5	13/9	Jar	Soil		X		X								
22	TP11	1.4-1.5	13/9	Jar	Soil	X											
23	TP11	3.4-3.5	13/9	Jar	Soil	X		X									
24	TP12	0.4-0.5	13/9	Jar	Soil		X		X								
25	TP12	0.9-1.0	13/9	Jar	Soil	X		X									
26	TP12	2.9-3.0	13/9	Jar	Soil	X											

ENVIROLAB GROUP

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

Job No: 153754
Date Received: 16-9-16
Time Received: 18:30
Received by: LN
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished by:	Douglas Partners	**Sample Receipt**	
Courier (by whom)		**Received by (Company):**	EGS
Condition of Sample at dispatch Cool or Ambient (circle)		**Print Name:**	
Temperature (if Applicable):		**Date & Time:**	16-9-16, 18:30
Print Name:	Michael Whittaker	**Signature:**	
Date & Time:	16/9/16		
Signature:			

Lab use only:
Samples Received: Cool or Ambient (circle one)
Temperature Received at: (if applicable)
Transported by: Hand delivered / courier

CHAIN OF CUSTODY

Douglas Partners
Geotechnics | Environment | Groundwater

Client:	Douglas Partners	**Project Number**	73308.02
Contact Person:	Michael Whittaker	**Project Name:**	Oatley
Project Mgr:	Kate Sargent	**PO No.:**	
		lab Quote No. :	
Address:	96 Hermitage Road West Ryde NSW 2114	**Date results required:**	
		Or choose: standard	
		Note: Inform lab in advance if urgent turnaround is required - surcharges apply	
Phone:	9809 0666 **Mob:** 0447 282 095	**Report format:** esdat / PDF / Excel	
Email:	michael.whittaker@douglaspartners.com.au kate.sargent@douglaspartners.com.au	**Comments:**	

To:	Envirolab Services		
Contact Person:	Aileen Hie		
Address:	12 Ashley Street Chatswood NSW 2068		
Phone:	02 9910 6200		
Fax:	02 9910 6201		
Email:	ahie@envirolab.com.au		
Laboratory Report No:			
Lab Comments:			

Sample information						Tests Required											Comments
Lab Sample ID	Field Sample ID	Depth	Date sampled	Container Type	Type of sample	Combo 8a	Combo 3a	VOC/SVOC (including cresote)	Spike + Blank	Combo 3	pH/CEC	Asb in materials				Combo	Provide as much information about the sample as you can
27	TP13	0.0-0.2	14/9	Jar	Soil	X											
28	TP14	0.4-0.5	14/9	Jar	Soil		X										
29	TP14	1.9-2.0	14/9	Jar	Soil	X					X						
30	TP14	2.9-3.0	14/9	Jar	Soil		X										
31	TP15	0.6-0.7	14/9	Jar	Soil	X											
32	TP16	0.4-0.5	14/9	Jar	Soil	X					X						
33	BH17	0.4-0.5	14/9	Jar	Soil	X											
34	BH18	0.4-0.5	14/9	Jar	Soil	X											
35	BH19	0.0-0.2	14/9	Jar	Soil		X										
36	BH19	0.55-0.65	14/9	Jar	Soil	X											
37	BH20	0.0-0.2	14/9	Jar	Soil	X											
38	BH21	0.4-0.5	14/9	Jar	Soil	X											
39	BH22	0.0-0.2	14/9	Jar	Soil	X											
40,41	Spike + Blank	-	-	Jar	Soil				X								
42	BD3/130916	-	-	Jar	Soil					X							
43	BD4	-	-	Jar	Soil					X							
44	BD5	-	-	Jar	Soil					X							
45	BD6	-	-	Jar	Soil					X							
46	Asb 1	-	-	Bag	Material							X					
47	Asb 2	-	-	↓	↓							X					
48	Asb 3	-	-									X					
49	Asb 4	-	-									X					
50	Asb 5	-	-									X					
51	Asb 6	-	-									X					
52	Asb 7	-	-									X					
53	Asb 8	-	-	↓	↓							X					

Relinquished by:	Douglas Partners	**Sample Receipt**	
Courier (by whom)		**Received by (Company):**	ECS
Condition of Sample at dispatch Cool or Ambient (circle)		**Print Name:**	Lara
Temperature (if Applicable):		**Date & Time:**	16.9.16, 18:30
Print Name:	Michael Whittaker	**Signature:**	
Date & Time:	15/9/16		
Signature:			

Lab use only:	
Samples Received: Cool or Ambient (circle one)	
Temperature Received at:	**(if applicable)**
Transported by: Hand delivered / courier	

Appendix F

Groundwater Bore Search Results

NSW OFFICE OF WATER
Work Summary

GW105604

Licence : 10BL162395
Licence Status Active
Authorised Purpose(s) DOMESTIC
Intended Purpose(s)

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

Commenced Date :
Completion Date : 10-Mar-2005
Final Depth :
Drilled Depth :

Contractor Name :
Driller :
Assistant Driller's Name :

Property : - KIM
GWMA : -
GW Zone : -
Standing Water Level :
Salinity :
Yield :

Site Details

Site Chosen By	County	Parish	Portion/Lot DP
	Form A : CUMBERLAND	ST GEORGE	
	Licensed : CUMBERLAND	ST GEORGE	Y 416710

Region : 10 - SYDNEY SOUTH COAST
River Basin : 213 - SYDNEY COAST - GEORGES RIVER
Area / District :
CMA Map : 9130-3S BOTANY BAY
Grid Zone : 56/1
Scale : 1:25,000

Elevation : 0.00
Elevation Source : (Unknown)
Northing : 6237245
Easting : 323803
Latitude (S) : 33° 59' 26"
Longitude (E) : 151° 5' 33"

GS Map :
MGA Zone : 56
Coordinate Source :

Construction

Negative depths indicate Above Ground Level;

H-Hole;P-Pipe;OD-Outside Diameter;ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity;PL-Placement of Gravel Pack;PC-Pressure Cemented;S-Sump;CE-Centralisers

H	P	Component Type	From (m)	To (m)	OD (mm)	ID (mm)	Interval	Details

(No Construction Details Found)

Water Bearing Zones

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

(No Water Bearing Zone Details Found)

Drillers Log

From (m)	To (m)	Thickness(m)	Drillers Description	Geological Material	Comments

Remarks

no form A in file

***** End of GW105604 *****

NSW OFFICE OF WATER
Work Summary

GW108996

Licence : 10BL164084 **Licence Status** Cancelled

	Authorised Purpose(s)	Intended Purpose(s)
Work Type : Bore	TEST BORE	TEST BORE
Work Status : Test Hole		
Construct. Method : Down Hole Hammer		
Owner Type : Private		

Commenced Date : **Final Depth :** 50.00 m
Completion Date : 09-Jul-2008 **Drilled Depth :** 50.00 m

Contractor Name : J.H. ISELT
Driller : 1435 ISELT, John Hans
Assistant Driller's Name :

Property : - HURSTVILLE CITY COUNCIL **Standing Water Level :** 21.00 m
GWMA : - **Salinity :**
GW Zone : - **Yield :** 1.20 L/s

Site Details

Site Chosen By	County	Parish	Portion/Lot DP
	Form A : CUMBERLAND	ST GEORGE	1//176469
	Licensed : CUMBERLAND	ST GEORGE	1 176469

Region : 10 - SYDNEY SOUTH COAST **CMA Map :**
River Basin : **Grid Zone :** **Scale :**
Area / District :

Elevation : **Northing :** 6239361 **Latitude (S) :** 33° 58' 16"
Elevation Source : **Easting :** 320927 **Longitude (E) :** 151° 3' 42"

GS Map : **MGA Zone :** 56 **Coordinate Source :**

Construction

Negative depths indicate Above Ground Level;

H-Hole;P-Pipe;OD-Outside Diameter;ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity;PL-Placement of Gravel Pack;PC-Pressure Cemented;S-Sump;CE-Centralisers

H	P	Component	Type	From (m)	To (m)	OD (mm)	ID (mm)	Interval	Details
1		Hole	Hole	0.00	12.00	240			Down Hole Hammer
1		Hole	Hole	12.00	50.00	150			Down Hole Hammer
1	1	Casing	PVC Class 6	-0.40	12.00	161			Glued; Seated on Bottom; S: .2~12m

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
30.40	31.20	0.80		21.00	50.00	1.20		1.00	

Drillers Log

From (m)	To (m)	Thickness(m)	Drillers Description	Geological Material	Comments
0.00	0.30	0.30	SANDY SOIL	Invalid Code	
0.30	1.50	1.20	CLAY BROWN	Clay Bands	
1.50	6.60	5.10	SANDSTONE CG YELLOW DK	Sandstone	
6.60	9.10	2.50	CLAY WHITE	Clay Bands	
9.10	30.40	21.30	SANDSTONE CG GREY LT	Sandstone	
30.40	31.20	0.80	FRACTURED SANDSTONE CG GREY LT	Invalid Code	
31.20	32.00	0.80	SHALE	Shale	
32.00	50.00	18.00	SANDSTONE CG GREY LT	Sandstone	

Remarks

***** End of GW108996 *****