Sikh Grammar School

Detailed Site Investigation: The Sikh Grammar School - 151 and 161 Tallawong Road, Rouse Hill, NSW

ENVIRONMENTAL

WATER

WASTEWATER

GEOTECHNICAL

CIVIL

PROJECT MANAGEMENT

P1806439JR06V02
December 2019

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Document and Distribution Status

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Revision No.	Description	Status	Release Date	Document Location			
				File Copy	The Sikh Grammar School Sydney	C/- PMDL	
1	Detailed Site Investigation	Final	02.12.2019	1E,1P,1H	1P	1P	

Distribution Types: F = Fax, H = hard copy, P = PDF document, E = Other electronic format. Digits indicate number of document copies.

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General Abbreviations

AASS	Actual acid sulfate soil
ABC	Ambient background concentrations
ACM	Asbestos containing material
AEC	Area of environmental concern
AF	Asbestos fines
AMP	Asbestos Management Plan
ANZECC	Australia and New Zealand Environment Conservation Council
ANZG	Australian and New Zealand Governments
ASC NEPM	National Environmental Protection (Assessment of Site Contamination) Measure (2013)
ASS	Acid sulfate soil
ASSMAC	Acid Sulfate Soils Management Advisory Committee
AST	Above ground storage tank
BGL	Below ground level
BH	Borehole
BTEXN	Benzene, toluene, ethylbenzene, xylene, naphthalene
CEMP	Construction Environmental Management Plan
COC	Chain of custody
COPC	Contaminants of potential concern
DA	Development application
DBT	Dibutyltin
DEC	Department of Environment and Conservation
DECC	Department of Environment and Climate Change
DNAPL	Dense non aqueous phase liquid
DP	Deposited Plan
DPI	NSW Department of Primary Industry
DPIW	NSW Department of Primary Industry – Water
DQI	Data quality indicators
DQO	Data quality objectives
DSI	Detailed Site Investigation
EAC	Ecological assessment criteria
EIL	Ecological investigation level
EMP	Environmental Management Plan
EPA	NSW Environmental Protection Authority
EQL	Estimated quantitation limit (Interchangeable with PQL and LOR)
ESA	Environmental Site Assessment
ESL	Ecological screening level
FA	Fibrous asbestos
GIL	Groundwater investigation level
HIL	Health investigation level
HM	Heavy metals
HSL	Health screening level
IA	Investigation Area
ISQG	Interim Sediment Quality Guideline
ITP	Inspection Testing Plan
LGA	Local government area
LNAPL	Light non aqueous phase liquid
LOR	Limit of reporting (Interchangeable with EQL and PQL)
MA	Martens & Associates Pty Ltd
mAHD	Metres, Australian Height Datum
mbgl	Metres below ground level

MNA	Monitored natural attenuation
MPE	Multi phase extraction
NAPL	Non aqueous phase liquid
NATA	National Association of Testing Authorities
ND	No data
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
OCP	Organochloride pesticides
OEH	NSW Office of Environment and Heritage
OPP	Organophosphorus pesticides
PACM	Potential asbestos containing material
PAH	Polycyclic aromatic hydrocarbons
PASS	Potential acid sulfate soil
PCB	Polychlorinated biphenyl
PCEMP	Post Construction Environmental Management Plan
PESA	Preliminary Environmental Site Assessment
PFAS	Per- and polyfluoroalkyl substances
PID	Photoionisation detector
ppb	Parts per billion
ppm	Parts per million
PQL	Practical quantitative limit (Interchangeable with EQL and LOR)
PSI	Preliminary Site Investigation
QA/QC	Quality assurance / quality control
RAC	Remediation acceptance criteria
RAP	Remedial Action Plan
HHRA	Human Health Risk Assessment
RPD	Relative percentage difference
SAC	Site assessment criteria
SAQP	Sampling and Analysis Quality Plan
SEPP	State Environmental Planning Policy
SIL	Soil investigation level
SOP	Standard operating procedure
SWL	Standing water level
SWMS	Safe Work Method Statement
SVR	Site Validation Report
TB	Trip blank
TBT	Tributyl tin
TCLP	Toxicity characteristics leaching procedure
TEQ	Toxic equivalency factor
TP	Test pit
TPH	Total petroleum hydrocarbons
TRH	Total recoverable hydrocarbons
TS	Trip spike
UCL	Upper confidence limit
UPSS	Underground petroleum storage system
UST	Underground storage tank
VHC	Volatile halogenated compounds
VOC	Volatile organic compounds
WHS	Work health and safety

1 Introduction

1.1 Overview

This report prepared by Martens and Associates (MA) documents a Detailed Site Investigation (DSI) on behalf of the Sikh Grammar School Sydney (the Client) to support a state significant development application (SSDA) for the construction of a school at 151 and 161 Tallawong Road, Rouse Hill, NSW ('the site').

Two soil supplemented Preliminary Site Investigation (PSI) have been previously completed for the site by DLA Environmental Services (DLA - 2014, 2017) which should be read in conjunction with this report.

The investigation area (IA) for this DSI is the entire site as shown in Attachment A.

1.2 Proposed Development

The proposed site development involves the following:

- Demolition of existing house and on ground carpark.
- Upgrade of Tallawong Road.
- Construction of a primary and secondary school.
- Construction of shared facilities.
- Construction of associated services and stormwater infrastructure.
- Construction of surface and basement car parking.
- Construction of a boarding house.
- Future subdivision for low density residential developments to the south west of new school.

The proposed development plans are provided in Attachment B.

1.3 Objectives

The objectives of this DSI are:

- Identification of historic and current potentially contaminating site activities.

- Evaluation of areas of environmental concern (AEC) and associated contaminants of potential concern (COPC) within the IA.
- Assess identified AEC and associated COPC.
- Provide comment on the suitability of the IA for the future school, and where required, provide recommendations for additional investigations.

1.4 Scope of Works

The scope of works includes:

- Review of previous two PSI (DLA, 2014, and DLA 2017).
- Intrusive subsurface investigation and sampling.
- Dam surface water sampling and sediment sampling.
- Laboratory analysis of selected soil, sediment and water samples for contaminants of potential concern (COPC).
- Assessment of laboratory analysis against the site acceptance criteria (SAC).
- Preparation of a report in general accordance with the relevant sections of ASC NEPM (2013), NSW OEH (2011) and NSW EPA (2017).

1.5 Reference Guidelines

This assessment was prepared in general accordance with the following guidelines:

- ANZG (2018) Australian and New Zealand Guidelines for Fresh and Marine Water Quality.
- ASC NEPC (1999, amended 2013) National Environmental Protection (Assessment of Site Contamination) Measure. Referred to as ASC NEPM (2013).
- NSW DEC (2007) Guidelines for the Assessment and Management of Groundwater Contamination.
- NSW EPA (2017) 3rd Ed. Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme.
- NSW EPA (1995) Sampling Design Guidelines.

- NSW OEH (2011) Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites.

2 Site Background Information

2.1 Site Details

Site information is summarised in Table 1, with the site area and general surrounds plans provided in Attachment A.

Table 1: Site information.

Item	Description / Detail
Site address	151 and 161 Tallawong Road, Rouse Hill, NSW
Legal identifier	Lots 42 and 43, DP 30186
Surveyed area	4.05 ha (CSS, 2013)
Local Government Area	Blacktown City Council (Council)
Current zoning and land use	Zoned R2 – Low density residential. Site is currently used for rural purposes.
Site description	Current development at the site includes a single storey brick residential dwelling, located in the eastern corner. A dam is located in the central portion of the site. An east to west aligned drainage depression extends across the central portion of the site and connects the site dam to other dams located to the southwest and northeast of the site. A partially-demolished piggery in the southern portion of the site
Surrounding land uses	Low density residential and rural dwellings in all directions.
Topography	The site generally has a northwest to west aspect across the southern portion and southwest aspect across the northern portion, with typical grades of between approximately 5 % to15 %. Site elevation ranges from 41.5 mAHD (west corner) to 54 mAHD (east corner) (CSS Survey, 2013).
Geology and soil mapping	The Penrith *1:100,000 Geological Sheet 9030* describes site geology as Bringelly Shale Formation within the Wianamatta Group, containing shale, carbonaceous claystone, claystone, laminite, fine to medium-grained lithic sandstone, rare coal and tuff. The NSW Environment and Heritage eSPADE website identifies the site as having soils of the Blacktown Landscape, consisting of shallow to moderately deep hard setting mottled texture contrasting soils, red and brown podzolic soils on crests grading to yellow podzolic soils on lower slopes and in drainage lines.
Surface hydrology	Via overland flow into the drainage depression and existing dam.

2.2 Local Meteorology

A summary of local meteorology from closest operational BOM Station with rainfall station (067104, 1990 to 2019) and temperature data (station 066124, 1969 to 2019) is provided in Table 2.

Table 2: Meteorological data.

Month	Mean Rainfall (mm)	Mean Maximum Temperature (°C)
January	73.2	32.0
February	103.7	31.7
March	88.3	29.5
April	58.5	27.1
May	42.7	23.3
June	62.6	20.0
July	27.7	19.9
August	41.4	22.2
September	35.5	25.2
October	43.9	28.9
November	69.8	28.6
December	72.3	31.3
Annual	712	24.6

2.3 Hydrogeology

A review of WaterNSW Real-time Water Databases indicated that there were no groundwater wells within 500 m of the site. No springs were listed within 500 m of the site in the NSW Government Hydrography Spatial Data (SEED, 2019).

3 Previous Site Investigations

A 'Soil Supplemented PSI' for 151 Tallawong Road (DLA, 2014) and a Soil Supplemented PSI for 161 Tallawong Road (DLA, 2017) previously identified potential sources of contamination. Key findings of the PSI's are summarised in Table 3.

Table 3: PSI (DLA – 2014, 2017) summary.

Investigation Details	Investigation Task and Finding
Scope of works	o Desktop review of previous reports, aerial photographs, online databases and land title information. o Review of local geology, hydrogeology and topography maps. o Site walkover to review existing site conditions. o Limited soil and water sampling.
Key findings of historic site review and walkover	Aerials indicate that the site was undeveloped between 1947 and 1955. The market gardens, dam, former dwellings and shed were present before 1965. The former piggery was constructed between 1965 and 1978. Existing residential dwelling presence since 1978. The site walkover identified that: o The site consisted of grass cover, becoming overgrown by 2017. o Signs of fill material were visible at the base of the metal shed behind main residence at 151 Tallawong Road. o Former piggery has been demolished with concrete flooring and low walls present. o A number of ACM fragments were observed beneath the surface of the main residence, and in the centre and southern boundary of the former piggery. o No obvious pollutants or oily sheen was visible in the water contained by the dam.
Identified AEC and COPC	Identified AEC and COPC included: o Residential dwelling with COPC consisting of potential TRH, PAHs, BTEX, asbestos, heavy metals and pesticides. o Fill area next to driveway with COPC consisting of TRH, PAHs, BTEX, asbestos, heavy metals and pesticides. o Stockpiled material near dam with COPC consisting of TRH, PAHs, BTEX, asbestos, heavy metals and pesticides. o Water within the on-site dam with COPC consisting of faecal coliforms, total phosphorous, total nitrogen, heavy metals and total suspended solids.
Results and Recommendations	Concentrations of TRH, BTEX, OC/OP pesticides and PAH were not detected above the LOR in any of the soil samples, and therefore comply with the adopted site acceptance criteria.

However, analysis confirmed ACM fragments are present on the surface beneath the main residence, on the surface in the centre of the former piggery and by the southern boundary of the footprint of the former piggery. Furthermore, the soil sample collected from beneath the main residence was reported to contain asbestos fibres.

Based on the surface water results, it is recommended that the water be chemically treated prior to discharge, or applied to land ensuring no run-off leaves the Site. Development of a dewatering plan may be considered prior to discharge, to fully plan and manage the removal of water from the dam while ensuring minimal risk to humans and the environment.

DLA recommended remedial action for the detected asbestos.

4 Aerial photographs

Aerial photographs taken of the site between 1955 and 2019, were reviewed to investigate historic site land uses. Copies of aerial photographs are provided in Table 4.

Table 4: Aerial photograph observations from 1955 to 2019.

Year (Source)	Site Activity	Surrounding Land Use
1955	Site includes a dwelling and shed to the east, a shed to the southwest with an adjoining dirt patch directly south of the shed (potential piggery) and a dam at the central portion of the site. The remainder of the site is vegetated, mainly with grass and scattered trees.	Surrounding land is rural residential properties with agricultural use.
1965	Shed was demolished. Market garden present at northeast of the site	Little to no change from previous.
1966	Market garden present at the south of the site. Otherwise, little to no change from previous.	Little to no change from previous.
1970	Shed and dirt patch were rebuilt at former location, southwest of site. Market garden present at northeast of the site.	Little to no change from previous.
1983	Extension to shed at the southwest of site. Effluent disposal present to the north of shed. Dwellings constructed northeast and east of the site respectively.	Greenhouse constructed to the far southeast from the site. Otherwise, little to no change from previous.
1984	Little to no change from previous.	Little to no change from previous.
1994	Half of shed's roof was removed. Dirt patch was vegetated with grass.	Little to no change from previous.
1998	Little to no change from previous.	Little to no change from previous.
2002	Little to no change from previous.	Little to no change from previous.
2010	Remaining half of shed's roof was removed.	Little to no change from previous.
2013	Sheds roof were entirely removed.	Little to no change from previous.

5 Conceptual Site Model

Martens has reviewed and revised AEC and COPC based on a review of site documentation and aerial imagery, these are summarised in Table 5 and mapped in Attachment A.

Table 5: AEC and COPC.

AEC	Potential for Contamination	COPC
AEC A – Former dwellings / sheds including 5 m curtilage	Pesticides and heavy metals may have been used underneath dwellings / sheds for pest control. Building construction may include potential asbestos containing material (PACM), galvanised metals, and lead based paints. Sheds may have stored hydrocarbons or pesticides.	HM, TRH, BTEXN, PAH, OCP/OPP and asbestos.
AEC B – Former Piggery	Building materials may contain HM and PACM.	HM and asbestos.
AEC C – Potential Fill	Fill material of unknown origin may have been used in the south eastern portion of the investigation area.	HM, TRH, BTEXN, PAH, OCP/OPP and asbestos.
AEC D – Market Gardens	Application of agricultural chemicals during site use as market gardens.	HM and OCP/OPP.
AEC E – Dam	Contaminants from onsite and surrounding rural and commercial land use may have accumulated in dam.	HM, OCP/OPP, TN and TP
AEC F – Former Effluent Dams	Waste deposited during site use as piggery may have accumulated HM. Filling of effluent dams with materials of unknown origins.	HM, TRH, BTEXN, PAH, OCP/OPP and asbestos.
AEC G – Existing Dwelling	Pesticides and heavy metals may have been used underneath dwellings for pest control. Building construction may include potential asbestos containing material (PACM), galvanised metals, and lead based paints.	HM, TRH, BTEXN, PAH, OCP/OPP and asbestos.
AEC H – Potential Fill	Fill material of unknown origin may have been used in the eastern portion of the investigation area.	HM, TRH, BTEXN, PAH, OCP/OPP and asbestos.
AEC I – Potential Fill	Fill material of unknown origin may have been used in the central portion of the investigation area.	HM, TRH, BTEXN, PAH, OCP/OPP and asbestos.
AEC J – Former Shed	Pesticides and heavy metals may have been used underneath sheds for pest control. Building construction may include potential asbestos containing material (PACM), galvanised metals, and lead based paints. Sheds may have stored hydrocarbons or pesticides.	HM, TRH, BTEXN, PAH, OCP/OPP and asbestos.

A conceptual site model (CSM), based on the AEC and COPC identified in Table 5, and the associated exposure pathways to potential receptors are summarised in Table 6.

Table 6: Conceptual site model.

COPC	Pathway	Exposure Route	Receptor
HM PAH OCP / OPP	Leaching of contaminants through the soil profile. Transport of contaminants via air (dust). Transport of contaminants by mechanical disturbance (e.g. earthworks). Transport of contaminants via surface water (runoff). Biomagnification and / or bioaccumulation along food chains.	Direct contact with contaminants. Ingestion of contaminants. Ingestion of food grown or reared in contaminated areas. Inhalation of contaminated media (e.g. dust).	<u>Possible Human Receptors</u> Current or future site users such as residents, visitors and workers. On and off-site construction or maintenance workers. Current or future users of surrounding residences. <u>Possible Environmental Receptors</u> Flora and fauna that may inhabit or migrate through the site. Contaminant pathway / sink areas. Surface water sinks (dam) located on or near the site.
TRH / BTEXN	As above plus: Volatilisation to air (vapour).	As above, plus: Inhalation of contaminate (e.g. vapour).	
Asbestos	Transport of contaminants via air and inhalation of particles. Transport of contaminants by mechanical disturbance (e.g. earthworks). Transport of particles on clothing.	Inhalation of contaminated media (e.g. dust).	<u>Possible Human Receptors</u> Current or future site users. On- and off-site construction or maintenance workers. Current or future users of surrounding residences, reserves, and commercial or industrial premises.

5.1 Groundwater

In consideration of the conceptual site model and the proposed development, the following lines of evidence indicate there will be no impact on current or future groundwater quality and no readily identifiable risk from potential existing groundwater contamination (if present) to future site receptors:

- Shallow (less than 4.0 m) groundwater was not encountered during bore holes excavated during the site geotechnical investigation (MA, 2019).
- The proposed development does not require any activities such as significant excavation that is expected to cause direct disturbance to groundwater.
- As noted in Section 2.3, there are no registered groundwater bores within 500m of the site indicating no beneficial reuse of groundwater on or in the immediate vicinity of the site.
- The proposed development will significantly increase impermeable area across the site and the drainage systems proposed as part of the development will limit surface water infiltration.

Based on the above, assessment of site groundwater is not considered warranted.

6 Sampling, Analytical and Quality Plan

A Sampling Analytical and Quality Plan (SAQP) was developed to ensure that data collected for the DSI is representative and provides a robust basis for site assessment decisions. Preparation of the SAQP was completed in general accordance with ASC NEPM (2013) methodology and includes:

- Data quality objectives (DQO).
- Data quality indicators (DQI).
- Sampling methodologies and procedures.

Field screening methods:

- Sample handling, preservation and storage procedures.
- Analytical QA/QC.

The following sections summarise the DQO, DQI and QA / QC.

6.1 Data Quality Objectives

DQO were prepared as statements specifying qualitative and quantitative data required to support project decisions. DQO were prepared in general accordance with NSW EPA (2017), EPA (2014) and NEPM (2013) guidelines, and are presented in Table 7.

Table 7: Data quality objectives.

Step 1 **Stating the Problem**	Review of previous site documentation identified potential contaminants that might be accessible to human and environment receptors during construction and operation of the proposed school. This DSI is required to assess risk posed by COPC in the identified AEC to receptors.
Step 2 **Identifying the Decision(s)**	To assess the suitability of the site for future land use, decisions are to be made based on the following questions: o What is the contaminant exposure pathway? o Has previous or current site use impacted the IA that may pose a risk to humans or the environment for future land use? o Does the IA require remediation or management prior to constructing the proposed development?
Step 3 **Identification of Inputs to the Decision**	The inputs to the assessment include: o Soil sampling at nominated locations across the IA. o Surface water sampling at site dam. o Laboratory analytical results for relevant COPC. o Assessment of analytical results against site suitable guidelines.
Step 4 **Study Boundary Definitions**	Study boundaries are as follows: o Lateral – Lateral boundary of the assessment is defined by the IA. o Vertical – Vertical boundary is governed by the maximum depth reached during subsurface investigations. o Temporal – Three rounds of soil sampling and two rounds of water sampling has been undertaken at this stage.
Step 5 **Development of Decision Rules**	The decision rule for this investigation area is as follows: If the concentration of contaminants exceeds the adopted assessment criteria, a risk assessment is required. Should the risk be unacceptable, further investigations to remediate and / or manage the onsite impacts, in relation to the proposed development, will be undertaken.
Step 6 **Specification of Limits on Decision Errors**	Guidance found in ASC NEPM (2013) Schedule B2 regarding 95% upper confidence limit (UCL) states that the 95% UCL of the arithmetic mean provides a 95% confidence level that the true population mean will be less than or equal to this value. Therefore a decision can be made based on a probability that 95% of the data collected will satisfy the site acceptance criteria. A limit on decision error will be 5% that a conclusive statement may be incorrect.
Step 7 **Optimisation of Sampling Design**	Proposed sampling locations shall provide even coverage across the site in the identified AEC. Sampling shall attempt to ensure that critical locations are assessed, sampled, and analysed for appropriate contaminants of concern. Soil sampling locations were set subject to site access and selected using a combined judgemental and grid pattern across the IA.

6.2 Data Quality Indicators

In accordance with NSW EPA (2017), the investigation data set has been compared with DQI outlined in Table 8 to ensure that collected data meets the project needs and that DQO has been met.

Table 8: Data quality indicators.

Assessment Measure (DQI)	Comment
Precision – A measure of the variability (or reproducibility) of data.	Precision is assessed by reviewing blind field duplicated sample set through the calculation of the relative percent difference (RPD). Data precision is deemed acceptable where results are 0-10 x EQL or where RPDs <50% (10-30 x EQL) or <30% (>30 x EQL). Exceedance of this range may still be considered acceptable where heterogeneous materials are sampled.
Accuracy – A measure of the closeness of reported data to the "true value".	Data accuracy is assessed by: o Field spikes and blanks. o Laboratory control samples.
Representativeness – The confidence that data are representative of each media present on the site.	To ensure data representativeness the following field and laboratory procedures are followed: o Ensure that the design and implementation of the sampling program have been completed in accordance with MA standard operating procedures (SOP). o Trip blank and trip spike samples shall be used for volatiles during field sampling to ensure no cross contamination or laboratory artefacts. o Ensure that all laboratory hold times are met and that sample handling and transport are completed in accordance with the MA SOP.
Completeness – A measure of the amount of usable data from a data collection activity.	To ensure data set completeness, the following is required: o Confirmation that all sampling methodology was completed in general accordance with the MA SOP. o COC and receipt forms. o Results from all laboratory QA / QC samples (lab blanks, trip blank, trip spike, lab duplicates). o NATA accreditation stamp on all laboratory reports.
Comparability - The confidence that data may be considered to be equivalent for each sampling and analytical event.	Data comparability is maintained by ensuring that: o All site sampling events are undertaken following methodologies outlined in MA SOP and published guidelines. o NATA accredited laboratory methodologies shall be followed on all laboratory analysis.

6.3 Methodology and Quality Assurance / Quality Control

Site investigation and soil sampling methodology as shown in Table 9, was completed to meet the project DQO.

Table 9: Investigation and sampling methodology.

Activity	Detail / Comments
Fieldworks	Surface and subsurface soil investigations were completed on 11 and 12 November 2019 and involved: o Excavation of 34 test pits (TP201 – TP234) using a 5.5 t excavator to a maximum investigation depth of 3.0 mbgl. o Excavation of 21 surface soil samples using a pushtube or manual excavation. o Collection of 2 dam silt and 1 surface water sample from the site dam. o Collection of QA / QC samples for laboratory analysis. o Collection of PACM samples. o Sieving soil for asbestos in line with the WA DOH (2009) and ASC NEPM (2013). It should be noted that sampling for AEC G was limited to external areas surrounding the existing dwelling. The dwelling footprint, is a data gap for the purpose of this report. Soil and water sampling locations are shown in Attachment A and test pit logs are provided in Attachment B.
Soil sampling	Soil sampling was completed by the MA environmental consultant using a clean pair of nitrile gloves for each sample. Each sample was placed into a laboratory supplied, 250 mL glass jar with no headspace to limit volatile loss and labelled with a unique identification number. PACM samples were collected in zip-locked bags and labelled with a unique identification number.
Water sampling	Surface water sampling was completed by the MA environmental consultant using a clean pair of nitrile gloves for each sample. Samples were collected into laboratory supplied bottles with appropriate preservations. Samples for metal analysis were laboratory filtered.
QA / QC sampling	QA samples were collected for the initial investigation as follows: o Four soil duplicate samples were collected for intra-laboratory analysis during investigations. o One soil triplicate sample was collected for inter-laboratory analysis during the investigation. o Two soil trip blank and one trip spike samples were used during soil sampling.
Sample handling and transport	Sample collection, storage and transport were conducted according to MA SOP. Collected soil and water samples were placed immediately into an ice chilled cooler box. Samples were dispatched to NATA accredited laboratories under chain of custody documentation within holding times.

6.4 Laboratory Analytical Suite

Laboratory analysis was carried out by Envirolab Pty Ltd a NATA accredited laboratory. Summary of laboratory analyses is summarised in Table 10.

Table 10: Summary of soil laboratory analyses.

COPC	Primary Samples Analysed	QA/QC Samples Analysed
BTEXN	26	2 trip spike
TRH	26	2 trip blank
PAH	26	
Heavy metals[1]	41	4 duplicates, 1 triplicate
OCP / OPP	34	
CEC and pH[2]	4	
Asbestos in soil	7	
Asbestos in material sample (presence / absence)	4	
Asbestos in soil (FA/AF)	1	

Notes

1. Heavy metals – arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc.
2. CEC and pH were analysed for EIL calculations and to assist in determining physiochemical interactions.

Table 11: Summary of surface water laboratory analyses.

COPC	Primary Samples Analysed
pH	1
EC	1
TN	1
TP	1
Heavy metals	1

Laboratory chain of custody documentation are provided in Attachment G.

7 Site Assessment Criteria

The site assessment criteria (SAC) adopted for this DSI listed in Table 12 were derived from the NEPM (2013).

Table 12: Site assessment criteria.

Media	Adopted Guidelines	Applicability
Soil	ASC NEPM (2013)	Health investigation levels (HIL) HIL A – Residential was adopted based on the proposed land use. Health screening levels (HSL) HSL A – Residential land use for clay was adopted based on clayey fill material on site. Ecological Investigation Levels (EIL) EILs were derived from methodology from ASC NEPM (2013) for the protection of terrestrial ecosystems for urban residential areas and public spaces. Calculations for EIL provided in Attachment D. Ecological Screening Levels (ESL) ESL A – Residential use, fine soil Management Limits Residential land use, fine soil Asbestos Assessed on a detect / non-detect basis[1]
Surface water	ANZG (2018)	Freshwater / Marine waters 95 % species protection pH and total Nutrients Lowland river systems

Notes

1. Where significant PACM were observed, soil sieving was conducted in accordance with NEPM (2013) and WA DoH (2009).

8 Results

8.1 General Field Observations

Initial field investigations and detailed site walkover were undertaken on 11 and 12 November 2019. All locations were examined for signs of contamination (odours, staining etc.). The following observations were made:

- No staining or odours were noted.
- Anthropogenic materials, such as bricks, plastics, irrigation pipes, were found within the fill profile up to 1.0 mbgl, mainly at the southwest portion of the site (AEC A, B, C, F, and G).
- Soil stockpiles were observed at and directly southwest of the location of the former dwelling (AEC A).
- PACM were observed at the southwest end of the piggery and the location at the former dwellings and in the stockpiles directly southwest of the former dwellings (AEC B).
- Neighbour sites to the east and south are being redeveloped.
- Otherwise, there were little to no changes to the site from the previous PSI (DLA 2014, and DLA 2017) walkovers.

8.2 Soil Conditions

Intrusive investigations of 34 test pits were undertaken 11 and 12 November 2019. Subsurface conditions in fill areas generally consisted of fill comprising clayey silt and silty clay to investigation depths of 2.0 mbgl. Residual soil (silty clay) was encountered beneath overlying fill to a maximum depth of 2.5 mbgl.

The former market garden areas comprised of silty clay / clayey silt to 0.1 mbgl overlying silty clay.

Weathered shale was encountered between 2.1 and 3.0 mbgl.

Test pit locations are shown on the sampling plan in Attachment A and test pit logs are provided in Attachment C.

8.3 Analytical Results

The following sections summarise the results of laboratory analysis. Detailed tabulated results showing individual sample concentrations compared to the adopted SAC are available in Attachment E. Laboratory analytical documentation is available in Attachment G.

A figure showing identified areas of contamination is provided in Attachment A.

8.3.1 Soil Results

Physiochemical properties (pH and CEC) were analysed to calculate EIL in Attachment D, are shown in Table 13.

Table 13: Summary of EIL physiochemical properties

Parameter	Laboratory result range	Adopted value
pH($CaCl_2$)	6.1 – 7.3	6.5
CEC ($cmol_c$/kg)	8.2 – 14	11.3

Laboratory analytical results are summarised in Table 14.

Table 14: Summary of soil analytical results.

Analyte	Results Compared to SAC
Heavy metals	HIL All results below SAC. EIL All results below SAC.
TRH/BTEXN	HSL **C6 – C10 (140 mg/kg) exceeded the SAC (120 mg/kg).** All other results below SAC.
OCP/OPP	HIL All results below SAC.
PAH	HIL All results below SAC. EIL All results below SAC.
Asbestos in soil	No asbestos detected.
FA/AF in soil	No asbestos detected
Asbestos in material	Material samples analysed had positive identification of asbestos: **6439/TP119/0.1/>7mm (122.09g).** **MS03** collected from **SP01.** **MS04** collected from **TP134** at **0.2 mbgl.**

8.3.2 Surface Water Results

A surface water sample was collected on 12 November 2019, with laboratory analytical results summarised in Table 15.

Table 15: Summary of water analytical results.

Analyte	Results Compared to SAC
Heavy metals	ANZG 95% Freshwater All results below SAC. pH and total nutrients **pH (8.8) outside of SAC (6.0 – 8.0)** All other results below SAC.

8.3.3 95% UCL Calculations

To address the marginal exceedances of the C6 – C10 HSL, statistical analysis of data collected from the area can be applied to calculate the 95% UCL for copper.

When applied, 95% UCL calculation provide the following values:

Table 16: Summary of 95% UCL calculation.

Analyte	Contaminant concentration range (mg/kg)	95% UCL (mg/kg)	Standard deviation (mg/kg)
C10 – C16	50 - 140	59.4	0.4

The UCL calculations (Attachment H) indicate that the site average (59.4 mg/kg) is less than the adopted guideline values for TRH C6 – C10 (120 mg/kg).

8.3.4 Data QA/QC

Field QA / QC data was collected as per the SAQP. A review of QA / QC procedure has been completed and is presented in the data validation report in Attachment F.

The report concludes that data is suitable for the purposes of the assessment.

9 Discussion

This DSI was undertaken by MA to assess the site to determine the suitability for the proposed school facility. The DSI was conducted in general accordance with the project SAQP.

Previous PSI (DLA – 2014, 2017) noted filling across the north of the site and PACM in the vicinity of the former piggery. Site conditions during this DSI were similar to those identified in the PSI.

Based on the review of previous investigators, the following AEC and COPC were assessed:

- AEC A – Former dwelling / sheds – asbestos, BTEXN heavy metals, OCP / OPP, PAH and TRH.
- AEC B – Former piggery – asbestos and heavy metals.
- AEC C – Fill pad – asbestos, BTEXN, heavy metals, OCP / OPP, TRH, PAH.
- AEC D – Market garden – heavy metals and OCP / OPP.
- AEC E – Dam –heavy metals, OCP / OPP, total nitrogen and phosphorous.
- AEC F – Former effluent dams – asbestos, BTEXN, heavy metals, OCP / OPP, PAH and TRH.
- AEC G – Existing dwelling – asbestos, BTEXN, heavy metals, OCP / OPP, PAH and TRH.
- AEC H – Fill pad – asbestos, BTEXN, heavy metals, OCP / OPP, PAH and TRH.
- AEC I – asbestos, BTEXN, heavy metals, OCP / OPP, PAH and TRH.
- AEC J – Former shed – asbestos, BTEXN, heavy metals, OCP / OPP, PAH and TRH.

Sampling in AEC G was limited to external areas surrounding the existing dwelling. The dwelling footprint, is a data gap for the purpose of this report.

The following observations with regard to contamination on the site were recorded:

- No staining or significant odours were noted in test pits and the site surface soils or dam waters.
- Anthropogenic materials, such as bricks, plastics, irrigation pipes, were found within the fill profile up to 1.0 mbgl, in AEC B and F.
- Soil stockpiles were observed at and directly southwest of the location of the former dwelling.
- PACM were observed at the southwest end of the piggery; at the location of the former dwellings; and in the stockpiles directly southwest of the former dwellings.
- There were little to no changes to the site from the PSI (DLA 2014, and DLA 2017) walkovers.

Laboratory analytical results (Envirolab report 230737) indicated all soil results were less than the adopted SAC, apart from C6 – C10 which exceeded HSL A (120 mg/kg) in TP134 0.2 mbgl (140 mg/kg). This exceedance is less than 250 % of the SAC and 95% UCL calculations indicated that C6 – C10 was less than the adopted SAC. Therefore, TP134 is not regarded as a hotspot and does not require management or remediation. Previous laboratory analysis of soil samples were all below the adopted SAC.

Exceedance in pH of surface dam water sample (8.8) may be a result of off-site activities (e.g. earthworks to the east and south) or seasoned variability. Previous laboratory analysis (DLA, 2017) for surface dam water samples was a pH 7.0.

Fibrous cement sheeting containing bonded asbestos was identified in the fill material at:

- TP119 - 0.1 mbgl,
- TP134 - 0.2 mbgl

PACM samples in TP119 and TP134 contained asbestos fibres (Envirolab report 230737), but no friable asbestos was detected in soil for TP119. Detected asbestos was bonded and is delineated to the western portion and an area in the southeast of the site.

6439/TP119/0.1/>7mm was calculated to be 0.0122% of the soil collected after sieving, which exceeds the NEPM guidelines for HIL A (<0.01%)

10 Conclusions and Recommendations

The site is considered to be contaminated with identified bonded asbestos material at the west (TP119) and south east (TP134) of the site. The existing dwelling footprint is a data gap which requires assessment following dwelling demolition. Otherwise, the site has a generally low risk of other contaminants. A Remediation Action Plan (RAP) is required for the site to guide the remediation of identified asbestos and to assess identified data gap. Post remediation, a Site Validation Report will be required.

If any unexpected finds (such as PACM, odours or soil staining) are encountered during site works, the unexpected find will require assessment by MA to determine requirements for additional investigation and / or remedial action.

Where any soil material is to be removed from site, a formal waste classification assessment shall be required in accordance with the NSW EPA Waste Classification Guidelines (2014).

11 Limitations

This DSI was undertaken in accordance with current industry standards.

It is important to note that no land contamination study can be considered to be a complete and exhaustive characterisation of a site nor can it be guaranteed that any assessment shall identify and characterise all areas of potential contamination or all past potentially contaminating land-uses. This is particularly the case where onsite filling has occurred or restrictions of sampling due to site access. Therefore, this report should not be read as a guarantee that only contamination identified shall be found on the site. Should material be exposed in future which appears to be contaminated, additional testing may be required to determine the implications for the site. The management of such 'unexpected finds' is to be included in the proposed site RAP.

Martens & Associates Pty Ltd has undertaken this assessment for the purposes of assessing potential site contamination. No reliance on this report should be made for any other investigation or proposal. Martens & Associates Pty Ltd accepts no responsibility, and provides no guarantee regarding the characteristics of areas of the site not specifically studied in this investigation.

12 References

Cedar Surveying Services (2013) *survey plan, Job No. 3828(2), dated November 2013 (CSS, 2013)*.

Clark N. R. and Jones D. C. (1991) *Penrith 1:100 000 Geological Sheet 9030*, 1st edition, Geological Survey of New South Wales, Sydney.

DLA Environmental Services (2014) Stage 1 Soil Supplemented *Preliminary Site Investigation: 151 Tallawong Road, Rouse Hill, NSW*. Ref. DL3280_S001502 (DLA, 2014).

DLA Environmental Services (2017) Soil Supplemented *Preliminary Site Investigation: 161 Tallawong Road, Rouse Hill, NSW*. Ref. DL4069_S006740 (DLA, 2017).

NEPC (1999, amended 2013) *National Environmental Protection (Assessment of Site Contamination) Measure*. Referred to as ASC NEPM (2013).

NSW EPA (2017) *3rd Ed. Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme*.

NSW EPA (1995) *Contaminated Sites: Sampling Design Guidelines*.

NSW Department of Environment & Heritage (eSPADE, NSW soil and land information).

NSW OEH (2011) *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites*.

PMDL (2019) Architectural Drawings, Project No. 2757, Drawing Nos. DA100, DA101, DA102, DA201 and DA301 and DA139 (PMDL, 2019).

Standards Australia (1997) Australian Standard AS 4482.1 – *Guide to sampling and investigation of potentially contaminated soil: Part 2: Non-volatile and semi-volatile substances*.

Standards Australia (1999) Australian Standard AS 4482.1 – *Guide to sampling and investigation of potentially contaminated soil: Part 2: Volatile substances*.

State Environmental Planning Policy No. 55 – *Remediation of Contaminated Land*.

Western Australia Department of Health (2009) Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia.

Attachment A Site Plans

PRELIMINARY DRAFT
NOT FOR DISTRIBUTION

0 10 20 30 40 50 m

Map Title / Figure:

Sampling Locations

EN02	Map
Tallawong Road, Rouse Hill	Site
The Sikh Grammar School	Project
DSI	Sub-Project
The Sikh Grammar School Australia	Client
25/11/2019	Date

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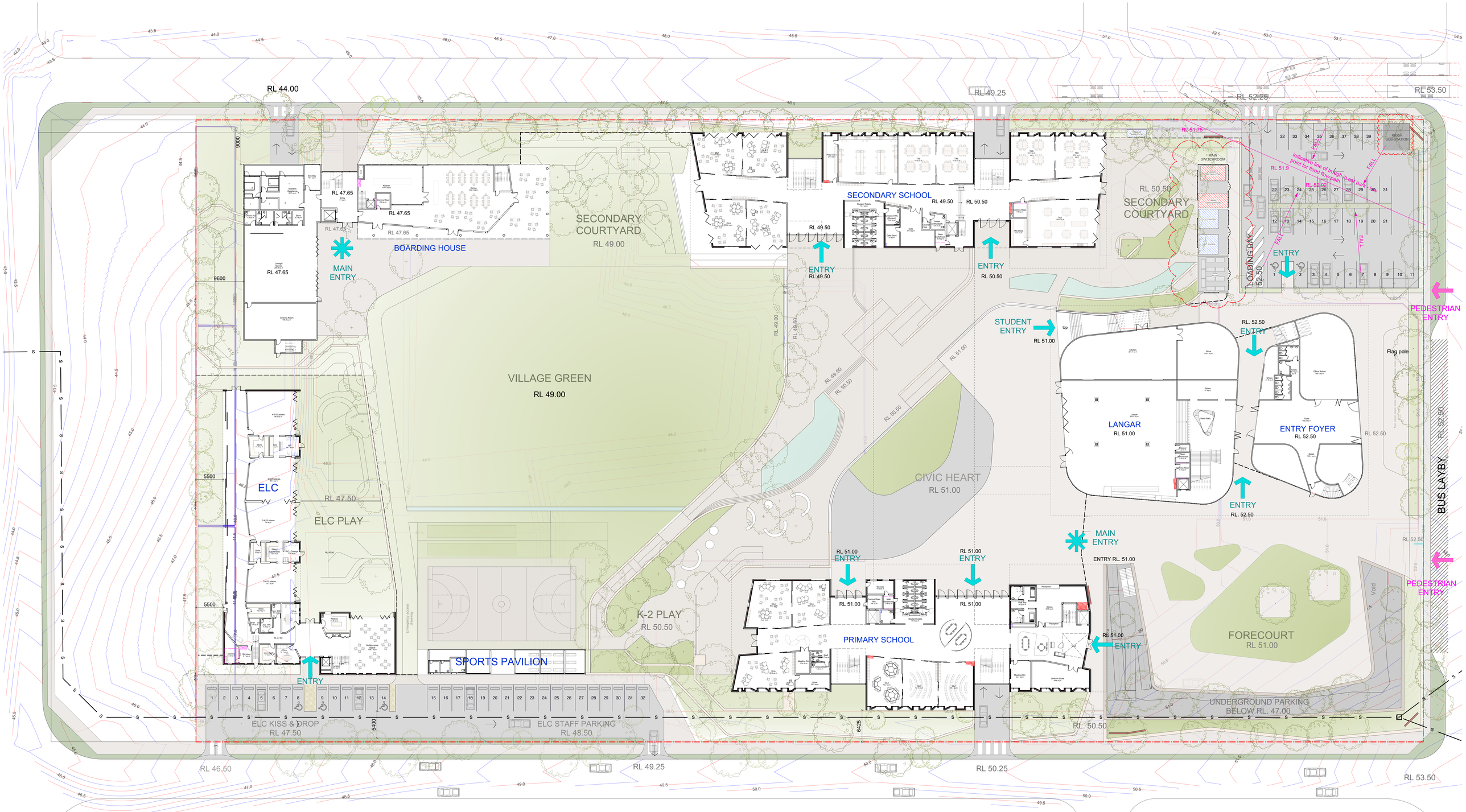
Map Set: MS02-Ro1
Projection: MGA
Model: P1806439QGSI02
Project No: P1806439

Attachment B Proposed Development Plans



01 PLAN
Level -1 (Carpark)
Scale 1 : 250

0 10 20 30 40 50 M

ISSUE	DATE	REVISION
3	5/4/19	Services Pavilion Updated
2	29/3/19	Access Toilets and car space updated

0mm 50mm 100mm

DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY.
CHECK ALL DIMENSIONS ON SITE BEFORE MANUFACTURE OR CONSTRUCTION.

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NSW NOMINATED ARCHITECTS: ANDREW PENDER 5317 DAVID MORRIS 5965 VICKI VAN DUIK 6478

PROJECT: Sikh Grammar School			PROJECT #: 2757
CLIENT: Sikh Grammar School Australia			DWG #: DA102
DWG: Site Plan-Level 0 (Ground)			
CLIENT REP & CONTACT: 151-161 Taliawong Road	DATE: FEB 2019	DRAWN: ??	REVISION: 3
	SCALE: 1:250@A0	CHKD: ??	

Attachment C Borehole / Test Pit Logs

CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP201**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	NIL	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.893934	RL SURFACE	53.3 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 0.70 m depth	NORTHING	-33.682729	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		53.30	P6439/TP101/0.0-0.2/S/1 D 0.00 m			ML	FILL: Gravelly SILT; low plasticity; pale grey, brown.			FILL
				0.30								
				53.00	P6439/TP101/0.4/S/1 D 0.40 m			CI	Silty CLAY; medium plasticity; red brown; trace gravels.	D		RESIDUAL SOIL
			0.5	*0.70*								
									Hole Terminated at 0.70 m			0.70: Refusal on Shale.
			1.0									
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									

EXCAVATION LOG TO BE READ IN CONJUCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS

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Engineering Log - TEST PIT

MARTENS 2.00 LIB.GLB Log MARTENS BOREHOLE P1806439TP101-TP134 V01.GPJ <<DrawingFile>> 05/12/2019 10:10 8.30.004 Datgel Lab and In Situ Tool - DGD | Lib: Martens 2.00 2016-11-13 Prj: Martens 2.00 2016-11-13

CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP202**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	NIL	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.893744	RL SURFACE	52.7 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 0.60 m depth	NORTHING	-33.682799	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		52.70	P6439/TP102/0.0-0.2/S/1 D 0.00 m			ML	FILL: Gravelly SILT; low plasticity; pale grey, brown.			FILL
				0.20								
				52.50				CI	Silty CLAY; medium plasticity; red brown; with shale gravels.	D		RESIDUAL SOIL
			0.5		P6439/TP102/0.3-0.5/S/1 D 0.30 m P6439/TP102/0.3-0.5/S/DUP1 D 0.30 m							
				0.60								
									Hole Terminated at 0.60 m			0.60: Refusal on Shale.
			1.0									
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP203**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	NIL	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.893862	RL SURFACE	52.3 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 0.90 m depth	NORTHING	-33.682836	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		52.30	P6439/TP103/0.0-0.2/S/1 D 0.00 m			ML	Gravelly SILT; low plasticity; pale grey, brown.			FILL
				0.20								
				52.10				CI	Silty CLAY; medium plasticity; red brown; trace gravels.	D		RESIDUAL SOIL
			0.5	0.50								
				51.80	P6439/TP103/0.5-0.7/S/1 D 0.50 m				Grey.			
				0.90								
			1.0						Hole Terminated at 0.90 m (Target depth reached)			
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP204**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	NIL	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.893841	RL SURFACE	51.5 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 0.60 m depth	NORTHING	-33.682943	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		51.50	P6439/TP104/0.0-0.2/S/1 D 0.00 m			ML	FILL: Gravelly SILT; low plasticity; pale grey.			FILL
				0.20								
				51.30				CI	Silty CLAY; medium plasticity; red brown.	D		RESIDUAL SOIL
			0.5	*0.50*	P6439/TP104/0.4-0.6/S/1 D 0.40 m							
				51.00					Red brown, grey.			
				0.60								
									Hole Terminated at 0.60 m			0.60: Refusal on Shale.
			1.0									
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP205**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	NIL	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.893997	RL SURFACE	51.9 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 0.70 m depth	NORTHING	-33.682891	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		51.90	P6439/TP105/0.0-0.2/S/1 D 0.00 m			ML	FILL: Gravelly SILT; low plasticity; pale grey.			FILL
				0.20								
				51.70				CI	Silty CLAY; medium plasticity; red brown.	D		RESIDUAL SOIL
			0.5		P6439/TP105/0.4-0.6/S/1 D 0.40 m							
				0.70								
									Hole Terminated at 0.70 m (Target depth reached)			
			1.0									
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									

EXCAVATION LOG TO BE READ IN CONJUCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS

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Engineering Log - TEST PIT

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP206**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.894083	RL SURFACE	51.2 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 0.70 m depth	NORTHING	-33.682942	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		51.20	P6439/TP106/0.0-0.2/S/1 D 0.00 m			ML	FILL: Gravelly SILT; low plasticity; pale brown; trace rootlets.			FILL
				0.20								
				51.00				CI	Silty CLAY; medium plasticity; brown.	D		RESIDUAL SOIL
			0.5	*0.50*								
				50.70	P6439/TP106/0.5-0.7/S/1 D 0.50 m				Red brown.			
				0.70								
									Hole Terminated at 0.70 m (Target depth reached)			
			1.0									
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									

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PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.89415	RL SURFACE	51.1 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø100 mm x 0.70 m depth	NORTHING	-33.683	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		51.10	P6439/TP107/0.0-0.2/S/1 D 0.00 m			CL	TOPSOIL: Silty CLAY; low plasticity; dark brown.			TOPSOIL
				0.20								
				50.90				CI	Silty CLAY; medium plasticity; red brown.	D		RESIDUAL SOIL
			0.5		P6439/TP107/0.5-0.7/S/1 D 0.50 m							
				0.70								
									Hole Terminated at 0.70 m (Target depth reached)			
			1.0									
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP208**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.893514	RL SURFACE	46 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 1.00 m depth	NORTHING	-33.68369	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		46.00	P6439/TP108/0.0-0.2/S/1 D 0.00 m			CL	TOPSOIL: Silty CLAY; low plasticity; dark brown; trace rootlets.	M - D		TOPSOIL
				0.30 45.70				CI	Silty CLAY; medium plasticity; red, brown.			RESIDUAL SOIL
			0.5							D		
					P6439/TP108/0.8-1.0/S/1 D 0.80 m							
				0.90 45.10 *1.00*					Grey, red brown.			
			1.0						Hole Terminated at 1.00 m (Target depth reached)			
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP209**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.893422	RL SURFACE	45.6 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 1.00 m depth	NORTHING	-33.683733	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
				45.60				CL	TOPSOIL: Silty CLAY; low plasticity; dark brown.	D - M		TOPSOIL
				0.20								
				45.40				CI	Silty CLAY; medium plasticity; red brown.			RESIDUAL SOIL
E		Not Encountered	0.5		P6439/TP109/0.3-0.5/S/T D 0.30 m P6439/TP109/0.3-0.5/S/DUP1 D 0.30 m P6439/TP109/0.3-0.5/S/TRIP1 D 0.30 m					D		
					P6439/TP109/0.7-0.9/S/T D 0.70 m							
				0.80								
				44.80					Grey, red brown.			
			1.0	*1.00*					Hole Terminated at 1.00 m (Target depth reached)			
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP210**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.89335	RL SURFACE	45.3 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 1.00 m depth	NORTHING	-33.683765	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		45.30	P6439/TP110/0.0-0.1/S/1 D 0.00 m			CL	TOPSOIL: Silty CLAY; low plasticity; dark brown.	M - D		TOPSOIL
				0.30 / 45.00				CI	Silty CLAY; medium plasticity; red brown.			RESIDUAL SOIL
			0.5		P6439/TP110/0.5-0.7/S/1 D 0.50 m					D		
				0.80 / 44.50					Grey, red brown.			
			1.0	1.00					Hole Terminated at 1.00 m (Target depth reached)			
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP211**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.892445	RL SURFACE	43.4 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 0.60 m depth	NORTHING	-33.683801	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		43.40	P6439/TP111/0.0-0.2/S/1 D 0.00 m			CL	TOPSOIL: Silty CLAY; low plasticity; brown; trace rootlets.			TOPSOIL
				0.20								
				43.20				CI	Silty CLAY; medium plasticity; red brown.	D		RESIDUAL SOIL
			0.5		P6439/TP111/0.4-0.6/S/1 D 0.40 m							
				0.60								
									Hole Terminated at 0.60 m (Target depth reached)			
			1.0									
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP212**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.892336	RL SURFACE	43 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 0.50 m depth	NORTHING	-33.683849	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		43.00	P6439/TP112/0.0-0.2/S/1 D 0.00 m			CL	TOPSOIL: Silty CLAY; low plasticity; brown; trace rootlets.			TOPSOIL
				0.20								
				42.80	P6439/TP112/0.3-0.5/S/1 D 0.30 m			CI	Silty CLAY; medium plasticity; red brown.	D		RESIDUAL SOIL
			0.5	0.50					Hole Terminated at 0.50 m (Target depth reached)			
			1.0									
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP213**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.892344	RL SURFACE	43.6 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 1.00 m depth	NORTHING	-33.684142	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		43.60	P6439/TP113/0.0-0.2/S/1 D 0.00 m			CL	TOPSOIL: Silty CLAY; low plasticity; dark brown; trace rootlets.	M		TOPSOIL
				0.20 43.40				CI	Silty CLAY; medium plasticity; pale red brown.			RESIDUAL SOIL
			0.5		P6439/TP113/0.5-0.7/S/1 D 0.50 m					D		
				0.70 42.90					Pale red brown grey.	D - M		
			1.0	1.00						M		
									Hole Terminated at 1.00 m (Target depth reached)			
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP214**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.892299	RL SURFACE	43.5 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 1.30 m depth	NORTHING	-33.684235	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		43.50	P6439/TP114/0.0-0.2/S/1 D 0.00 m			CL	FILL: Silty CLAY; low plasticity; dark brown; trace rootlets.	D - M		FILL
				0.20								
				43.30				CL	FILL: Silty CLAY; low plasticity; pale red brown.			
			0.5		P6439/TP114/0.5-0.7/S/1 D 0.50 m					D		
				0.80								
				42.70				CI	Silty CLAY; medium plasticity; red brown grey.			RESIDUAL SOIL
			1.0		P6439/TP114/1.0/S/1 D 1.00 m							
				1.30								
									Hole Terminated at 1.30 m (Target depth reached)			
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP215**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.892205	RL SURFACE	43.6 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 1.50 m depth	NORTHING	-33.684215	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		43.60	P6439/TP115/0.0-0.2/S/1 D 0.00 m			CL	FILL: Silty CLAY; low plasticity; dark brown; trace rootlets.	D - M		FILL
				0.30 43.30				CI	FILL: Silty CLAY; medium plasticity; red brown grey black.			
			0.5		P6439/TP115/0.5-0.7/S/1 D 0.50 m							
				0.90 42.70				CI	Silty CLAY; medium plasticity; red brown grey.	D		RESIDUAL SOIL
			1.0		P6439/TP115/1.1-1.3/S/1 D 1.10 m							
			1.5	*1.50*					Hole Terminated at 1.50 m (Target depth reached)			
			2.0									
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP216**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.892135	RL SURFACE	43.6 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 2.40 m depth	NORTHING	-33.684268	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		43.60	P6439/TP116/0.0-0.2/S/1 D 0.00 m			CL	FILL: Silty CLAY; low plasticity; pale brown; with brick and plastic fragments.	D		FILL
				0.30 / 43.30	P6439/TP116/0.3-0.5/S/1 D 0.30 m				Low to medium plasticity; brown.			
			0.5	0.50 / 43.10					With plastics.			
				0.70 / 42.90					Medium plasticity; pale red brown.			
					P6439/TP116/0.8-1.0/S/1 D 0.80 m							
			1.0	1.00 / 42.60					With plastics and irrigation pipes.			
				1.40 / 42.20				CI	Silty CLAY; medium plasticity; red brown grey.			RESIDUAL SOIL
			1.5		P6439/TP116/1.6-1.8/S/1 D 1.60 m							
			2.0	2.40								
			2.5						Hole Terminated at 2.40 m (Target depth reached)			
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP217**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.891952	RL SURFACE	43.6 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 2.50 m depth	NORTHING	-33.6843	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		43.60	P6439/TP117/0.0-0.2/S/1 D 0.00 m			CL	FILL: Silty CLAY; low plasticity; pale brown; trace gravels.			FILL
			0.5	0.50 43.10	P6439/TP117/0.5-0.7/S/1 D 0.50 m				Low to medium plasticity; brown.			
				0.80 42.80					Medium plasticity; pale red brown.			
			1.0		P6439/TP117/1.0-1.1/S/1 D 1.10 m					D		
				1.30 42.30				CI	Silty CLAY; medium plasticity; red brown grey.			RESIDUAL SOIL
			1.5									
			2.0		P6439/TP117/2.0-2.2/S/1 D 2.00 m							
			2.5	2.50					Hole Terminated at 2.50 m (Target depth reached)			
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP218**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.891821	RL SURFACE	43.5 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 2.30 m depth	NORTHING	-33.68434	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		43.50				CL	FILL: Silty CLAY; low plasticity; pale brown; trace gravels.			FILL
				0.20 / 43.30					With PACM; builders rubble and bricks.			
					P6439/TP118/0.3-0.5/S/1 D 0.30 m							
			0.5									
				0.80 / 42.70	P6439/TP118/0.8-1.0/S/1 D 0.80 m				Low to medium plasticity; pale red brown grey.			
			1.0									
				1.10 / 42.40				CI	Silty CLAY; medium plasticity; red brown grey.	D		RESIDUAL SOIL
			1.5		P6439/TP118/1.5-1.7/S/1 D 1.50 m							
			2.0									
				2.30								
									Hole Terminated at 2.30 m (Target depth reached)			
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP219**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.891894	RL SURFACE	45.1 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 2.00 m depth	NORTHING	-33.684474	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		45.10	P6439/TP119/0.0-0.2/S/1 D 0.00 m			CL	FILL: Silty CLAY; low plasticity; pale brown; trace gravels.			FILL
				0.20 / 44.90					With plastics, concrete and brick fragments.			
			0.5		P6439/TP119/0.5-0.7/S/1 D 0.50 m							
				0.90 / 44.20					Low to medium plasticity; pale red brown.			
			1.0		P6439/TP119/1.0-1.2/S/1 D 1.00 m					D		
				1.20 / 43.90				CI	Silty CLAY; medium plasticity; red brown grey.			RESIDUAL SOIL
			1.5									
					P6439/TP119/1.8-2.0/S/1 D 1.80 m							
			2.0	2.00					Hole Terminated at 2.00 m (Target depth reached)			
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP220**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.89202	RL SURFACE	45.6 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 3.00 m depth	NORTHING	-33.684481	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		45.60	P6439/TP120/0.0-0.2/S/1 D 0.00 m			CL	FILL: Silty CLAY; low plasticity; pale brown; trace gravels.	M		FILL
				0.10 / 45.50					With concrete and brick fragments.			
				0.30 / 45.30					Low to medium plasticity; red brown grey black.			
			0.5		P6439/TP120/0.5-0.7/S/1 D 0.50 m							
				0.80 / 44.80				CI	Silty CLAY; medium plasticity; red brown grey.			RESIDUAL SOIL
			1.0									
					P6439/TP120/1.3-1.5/S/1 D 1.30 m							
			1.5	1.50 / 44.10					Pale grey.	D		
			2.0	2.00 / 43.60	P6439/TP120/2.0-2.2/S/1 D 2.00 m				With shale gravels.			
				2.30 / 43.30					SHALE: pale grey brown; very low to low strength; extremely weathered			WEATHERED ROCK
			2.5									
					P6439/TP120/2.8-3.0/S/1 D 2.80 m							
			3.0	3.00					Hole Terminated at 3.00 m (Target depth reached)			
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP221**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.892149	RL SURFACE	45.6 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 2.50 m depth	NORTHING	-33.684369	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		45.60	P6439/TP121/0.0-0.2/S/1 D 0.00 m			CL	FILL: Silty CLAY; low plasticity; pale brown; trace gravels.			FILL
				0.30 / 45.30					Low to medium plasticity; pale red brown grey.			
			0.5	0.50 / 45.10					With concrete and brick fragments.			
					P6439/TP121/0.8-1.0/S/1 D 0.80 m							
			1.0	1.00 / 44.60				CI	Silty CLAY; medium plasticity; pale red brown grey.	M		RESIDUAL SOIL
			1.5	1.50 / 44.10	P6439/TP121/1.5-1.7/S/1 D 1.50 m				Pale grey.			
				1.90 / 43.70					With shale gravels.			
			2.0	2.10 / 43.50					SHALE: pale grey brown; very low to low strength; extremely weathered			WEATHERED ROCK
					P6439/TP121/2.3-2.5/S/1 D 2.30 m							
			2.5	2.50					Hole Terminated at 2.50 m (Target depth reached)			
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP222**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.892317	RL SURFACE	45.6 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 2.50 m depth	NORTHING	-33.68435	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		45.60	P6439/TP122/0.0-0.2/S/1 D 0.00 m			CL	FILL: Silty CLAY; low plasticity; pale brown; trace gravels.			FILL
				0.10 / 45.50					With bricks, plastics, concrete.			
				0.30 / 45.30	P6439/TP122/0.3-0.5/S/1 D 0.30 m				Low to medium plasticity; pale red brown grey.			
			0.5									
				0.70 / 44.90				CI	Silty CLAY; medium plasticity; red brown grey.			RESIDUAL SOIL
			1.0		P6439/TP122/1.0-1.2/S/1 D 1.00 m					D		
				1.40 / 44.20					Pale orange grey.			
			1.5									
				1.70 / 43.90					With shale gravels.			
					P6439/TP122/1.8-2.0/S/1 D 1.80 m							
			2.0									
				2.10 / 43.50					SHALE: pale grey brown; very low to low strength; extremely weathered			WEATHERED ROCK
			2.5	2.50					Hole Terminated at 2.50 m (Target depth reached)			
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP223**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.892407	RL SURFACE	47.1 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 3.30 m depth	NORTHING	-33.684255	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		47.10 / 0.10 / 47.00	P6439/TP123/0.0-0.2/S/1 D 0.00 m			CL	FILL: Silty CLAY; low plasticity; dark brown; trace gravels. With bricks, plastics.			FILL
				0.30 / 46.80				CI	Silty CLAY; medium plasticity; red brown grey.			RESIDUAL SOIL
			0.5		P6439/TP123/0.5-0.7/S/1 D 0.50 m							
			1.0							D		
					P6439/TP123/1.3-1.5/S/1 D 1.30 m							
			1.5									
				1.80 / 45.30					Pale red brown grey.			
			2.0		P6439/TP123/2.0-2.2/S/1 D 2.00 m							
			2.5							M		
					P6439/TP123/2.8-3.0/S/1 D 2.80 m							
			3.0									
				3.30					Hole Terminated at 3.30 m (Target depth reached)			
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP224**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.892539	RL SURFACE	47 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 1.90 m depth	NORTHING	-33.684297	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		47.00	P6439/TP124/0.0-0.2/S/1 D 0.00 m			CL	FILL: Silty CLAY; low plasticity; pale brown; trace gravels.			FILL
				0.10 / 46.90					With builders rubble and bricks.			
			0.5									
					P6439/TP124/0.7-0.9/S/1 D 0.70 m					D		
			1.0									
				1.20 / 45.80				CI	Silty CLAY; medium plasticity; red brown grey; trace shale.			RESIDUAL SOIL
					P6439/TP124/1.4-1.6/S/1 D 1.40 m							
			1.5									
				1.70 / 45.30					SHALE: dark grey; very weathered.			WEATHERED ROCK
				1.90								
			2.0						Hole Terminated at 1.90 m (Target depth reached)			
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP225**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.892628	RL SURFACE	47 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 1.50 m depth	NORTHING	-33.684367	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		47.00	P6439/TP125/0.0-0.2/S/1 D 0.00 m			ML	FILL: Clayey SILT; low plasticity; pale brown; trace gravels.			FILL
				0.30 / 46.70				CL-CI	Silty CLAY; low to medium plasticity; pale red brown.			RESIDUAL SOIL
			0.5		P6439/TP125/0.5-0.7/S/1 D 0.50 m					D		
				0.90 / 46.10					SHALE: dark grey; very weathered.			WEATHERED ROCK
			1.0		P6439/TP125/1.0-1.2/S/1 D 1.00 m							
			1.5	1.50					Hole Terminated at 1.50 m (Target depth reached)			
			2.0									
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP226**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.893745	RL SURFACE	48.8 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 0.50 m depth	NORTHING	-33.683831	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		48.80				CL	FILL: Silty CLAY; low plasticity; pale brown; trace gravels.			FILL
				0.20								
				48.60	P6439/TP126/0.2-0.4/S/1 D 0.20 m P6439/TP126/0.3-0.5/S/1 D 0.30 m			CI	Silty CLAY; medium plasticity; pale red brown.	D		RESIDUAL SOIL
			0.5	*0.50*					Hole Terminated at 0.50 m (Target depth reached)			
			1.0									
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP227**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.893871	RL SURFACE	48.7 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 1.50 m depth	NORTHING	-33.683904	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		48.70	P6439/TP127/0.0-0.2/S/1 D 0.00 m			CL	FILL: Silty CLAY; low plasticity; pale brown; trace gravels.			FILL
				0.20 / 48.50				CI	Silty CLAY; medium plasticity; pale red brown grey.			RESIDUAL SOIL
			0.5		P6439/TP127/0.5-0.7/S/1 D 0.50 m					D		
			1.0	1.00 / 47.70	P6439/TP127/1.0-1.2/S/1 D 1.00 m				Red brown.			
			1.5	1.50					Hole Terminated at 1.50 m (Target depth reached)			
			2.0									
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP228**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.893896	RL SURFACE	48.4 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 1.00 m depth	NORTHING	-33.683731	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		48.40	P6439/TP128/0.0-0.2/S/1 D 0.00 m			CL	FILL: Silty CLAY; low plasticity; pale brown; trace rootlets			FILL
				0.10 48.30					With concrete.			
				0.30 48.10					Low to medium plasticity; pale red brown grey.			
			0.5	*0.50* 47.90					With concrete.	D		
				0.70 47.70	P6439/TP128/0.8-1.0/S/1 D 0.80 m			CI	Silty CLAY; medium plasticity; red brown grey.			RESIDUAL SOIL
			1.0	*1.00*					Hole Terminated at 1.00 m (Target depth reached)			
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP229**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.893976	RL SURFACE	49 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 1.30 m depth	NORTHING	-33.683805	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		49.00	P6439/TP129/0.0-0.1/S/1 D 0.00 m			CL	FILL: Silty CLAY; low plasticity; pale brown; trace rootlets.			FILL
				0.10 48.90					With concrete and bricks.			
				0.30 48.70					Low to medium plasticity; pale red brown grey.			
			0.5	0.50 48.50	P6439/TP129/0.5-0.7/S/1 D 0.50 m			CI	Silty CLAY; medium plasticity; red brown grey.	D		RESIDUAL SOIL
				0.90 48.10					Red brown.			
			1.0		P6439/TP129/1.0-1.2/S/1 D 1.00 m							
				1.30					Hole Terminated at 1.30 m (Target depth reached)			
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/11/2019	**REF TP230**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.893997	RL SURFACE	50.2 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 1.50 m depth	NORTHING	-33.683679	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		50.20	P6439/TP130/0.0-0.1/S/1 D 0.00 m			CL	TOPSOIL: Silty CLAY; low plasticity; pale brown; trace rootlets.			TOPSOIL
				0.20								
				50.00				CL-CI	Silty CLAY; low to medium plasticity; pale red brown grey.			RESIDUAL SOIL
				0.30								
				49.90					Medium plasticity; red brown grey.			
			0.5		P6439/TP130/0.5-0.7/S/1 D 0.50 m					D		
			1.0									
					P6439/TP130/1.3-1.5/S/1 D 1.30 m							
			1.5	*1.50*					Hole Terminated at 1.50 m (Target depth reached)			
			2.0									
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/12/2019	**REF TP231**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.894074	RL SURFACE	50.6 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 1.30 m depth	NORTHING	-33.683729	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		50.60	P6439/TP131/0.0-0.1/S/1 D 0.00 m			CL	TOPSOIL: Silty CLAY; low plasticity; brown; trace rootlets.			TOPSOIL
				0.20								
				50.40				CL-CI	Silty CLAY; low to medium plasticity; pale red brown grey.			RESIDUAL SOIL
			0.5		P6439/TP131/0.5-0.7/S/1 D 0.50 m					D		
				0.80								
				49.80					Medium plasticity; red brown grey.			
			1.0		P6439/TP131/1.0-1.2/S/1 D 1.00 m							
				1.30								
									Hole Terminated at 1.30 m (Target depth reached)			
			1.5									
			2.0									
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/12/2019	**REF TP232**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.894177	RL SURFACE	50.6 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 1.50 m depth	NORTHING	-33.683846	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		50.60	P6439/TP132/0.0-0.1/S/1 D 0.00 m			CL	FILL: Silty CLAY; low plasticity; pale grey; trace rootlets.			FILL
				0.30 / 50.30					Medium plasticity; pale red brown grey.			
			0.5	0.50 / 50.10	P6439/TP132/0.5-0.7/S/1 D 0.50 m			CL-CI	Silty CLAY; low to medium plasticity; pale grey brown.	D		RESIDUAL SOIL
			1.0	1.00 / 49.60	P6439/TP132/1.0-1.2/S/1 D 1.00 m				Trace shale.			
			1.5	1.50					Hole Terminated at 1.50 m (Target depth reached)			
			2.0									
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/12/2019	**REF TP233**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.894303	RL SURFACE	57.8 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 2.00 m depth	NORTHING	-33.683902	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		57.80	P6439/TP133/0.0-0.1/S/1 D 0.00 m			ML	FILL: Clayey SILT; low plasticity; dark grey; trace mulch.	D		FILL
				0.20 / 57.60				CL-CI	FILL: Silty CLAY; low to medium plasticity; pale orange red brown.			
			0.5		P6439/TP133/0.5-0.7/S/1 D 0.50 m							
			1.0	1.00 / 56.80	P6439/TP133/1.0-1.2/S/1 D 1.00 m			CL-CI	Silty CLAY; low to medium plasticity; pale orange red brown.			RESIDUAL SOIL
			1.5									
				1.60 / 56.20					SHALE: pale grey brown; very low to low strength; extremely weathered.			WEATHERED ROCK
			2.0	2.00					Hole Terminated at 2.00 m (Target depth reached)			
			2.5									
			3.0									
			3.5									

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CLIENT	The Sikh Grammar School Sydney c/- PMDL	COMMENCED	11/11/2019	COMPLETED	11/12/2019	**REF TP234**	
PROJECT	Detailed Site Investigation	LOGGED	WX	CHECKED	BM	Sheet 1 OF 1	
SITE	151 & 161 Tallawong Road, Rouse Hill, NSW	GEOLOGY	Bringelly Shale	VEGETATION	Grass	PROJECT NO. P1806439	
EQUIPMENT	Excavator	EASTING	150.894242	RL SURFACE	50.8 m	DATUM	AHD
EXCAVATION DIMENSIONS	Ø1000 mm x 1.50 m depth	NORTHING	-33.683935	ASPECT	Southwest	SLOPE	2%

Excavation					Sampling		Field Material Description					
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E		Not Encountered		50.80	P6439/TP134/0.0-0.1/S/1 D 0.00 m			ML	FILL: Clayey SILT; low plasticity; dark grey; trace mulch.			FILL
				0.20								
				50.25 / 50.55				CL-CI	FILL: Silty CLAY; low to medium plasticity; pale red brown grey. With PACM.			
			0.5		P6439/TP134/0.5-0.7/S/1 D 0.50 m					D		
				0.90								
				49.90				CI	Silty CLAY; medium plasticity; pale grey brown; trace shale.			RESIDUAL SOIL
			1.0		P6439/TP134/1.0-1.2/S/1 D 1.00 m							
			1.5	1.50					Hole Terminated at 1.50 m (Target depth reached)			
			2.0									
			2.5									
			3.0									
			3.5									

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Attachment D EIL Calculations

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Inputs
Select contaminant from list below
Cr_III
Below needed to calculate fresh and aged ACLs
Enter % clay (values from 0 to 100%)
30
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
7
or for aged ABCs only
Enter State (or closest State)
NSW
Enter traffic volume (high or low)
low

Outputs		
Land use	Cr III soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	150	190
Urban residential and open public spaces	300	580
Commercial and industrial	460	960

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Inputs
Select contaminant from list below
Cu
Below needed to calculate fresh and aged ACLs
Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)
11.3
Enter soil pH (calcium chloride method) (values from 1 to 14)
6.5
Enter organic carbon content (%OC) (values from 0 to 50%)
1
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
7
or for aged ABCs only
Enter State (or closest State)
NSW
Enter traffic volume (high or low)
low

Outputs		
Land use	Cu soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	70	85
Urban residential and open public spaces	120	210
Commercial and industrial	170	300

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Inputs
Select contaminant from list below
Ni
Below needed to calculate fresh and aged ACLs
Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)
11.3
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
7
or for aged ABCs only
Enter State (or closest State)
NSW
Enter traffic volume (high or low)
low

Outputs		
Land use	Ni soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	35	35
Urban residential and open public spaces	85	190
Commercial and industrial	140	320

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Inputs
Select contaminant from list below
Zn
Below needed to calculate fresh and aged ACLs
Enter cation exchange capacity (silver thiourea method) (values from 0 to 100 cmolc/kg dwt)
11.3
Enter soil pH (calcium chloride method) (values from 1 to 14)
6.5
Below needed to calculate fresh and aged ABCs
Measured background concentration (mg/kg). Leave blank if no measured value
or for fresh ABCs only
Enter iron content (aqua regia method) (values from 0 to 50%) to obtain estimate of background concentration
7
or for aged ABCs only
Enter State (or closest State)
NSW
Enter traffic volume (high or low)
low

Outputs		
Land use	Zn soil-specific EILs (mg contaminant/kg dry soil)	
	Fresh	Aged
National parks and areas of high conservation value	75	170
Urban residential and open public spaces	200	520
Commercial and industrial	300	770

Attachment E Laboratory Summary Tables

	Nutrients		Metals								Other	
	Nitrogen (Total)	Phosphorus (Total)	Arsenic (III/V)	Cadmium	Chromium (III/VI)	Copper	Lead	Mercury	Nickel	Zinc	pH	Electrical Conductivity
	µg/L		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L		
EQL	100	50	1	1	1	1	1	0.05	1	1	0.1	0.1
ANZG (2018) Freshwater 95% toxicant DGVs	**500**	**50**	**24.0 / 13.0**	**0.2**	**3.3 / 1.0**	**1.4**	**3.4**	**0.6**	**11**	**8**	**6.5-8.0**	
Field_ID												
6439/SW01	900	<50	2	<1	<1	1	<1	<0.05	<1	4	**8.8**	330
Statistical Summary												
Number of Detects	1	0	1	0	0	1	0	0	0	1	1	1
Number of Guideline Exceedances(Detects Only)	1	0	0	0	0	0	0	0	0	1	1	0

		TRH							BTEX						PAH																			Metals							
		C6-C10	C6-C10 (F1 minus BTEX)	C10-C16	C10-C16 (F2 minus Naphthalene)	C16-C34	C34-C40	C10-C40 (Sum of total)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Benzo(b+j+k)fluoranthene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum of positives)	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		25	25	50	50	100	100	50	0.2	0.5	1	2	1	3	0.2	0.1	0.1	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.5	0.5	0.05	4	0.4	1	1	1	0.1	1	1
NEPM 2013 Table 1A(1) HILs Res A Soil																														**3**	**3**	**3**	**300**	**100**	**20**	**100**	**6000**	**300**	**40**	**400**	**7400**
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay																																									
0-1m			**50**		**280**				**0.7**	**480**	**NL**			**110**													**5**													
Site Specific EIL																											**170**							**100**		**580**	**210**	**1100**		**190**	**520**
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil			**180**		**120**	**1300**	**5600**		**65**	**105**																															
0-2m											**125**			**45**						**0.7**																					
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil		**800**		**1000**		**3500**	**10000**																																		
Field_ID																																									
6439/C01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	<0.4	14	19	22	<0.1	8	52
6439/C02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	<0.4	17	19	21	<0.1	8	54
6439/C03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	<0.4	11	24	16	<0.1	9	53
6439/C04		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	<0.4	13	12	20	<0.1	6	46
6439/C05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	<0.4	11	17	21	<0.1	6	59
6439/C06		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	<0.4	10	13	17	<0.1	5	38
6439/TP253		<25	<25	<50	<50	190	<100	190	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	7	<0.4	10	19	21	<0.1	5	58
6439/TP254		<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	7	<0.4	12	17	43	0.1	5	96
6439/TP255		<25	<25	<50	<50	130	<100	130	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	7	<0.4	14	17	42	<0.1	5	42
6439/TP257		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	<0.4	15	19	20	<0.1	8	58
6439/TP258		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	<0.4	13	17	19	<0.1	6	38
6439/TP101/0-0.2		<25	<25	<50	<50	100	140	240	<0.2	<0.5	<1	<2	<1	<3	0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.2	<0.5	<0.5	<0.5	0.5	7	<0.4	12	13	17	<0.1	5	28
6439/TP102/0-0.2		<25	<25	<50	<50	180	190	370	<0.2	<0.5	<1	<2	<1	<3	0.8	<0.1	<0.1	0.2	0.4	0.52	0.4	0.4	<0.1	0.9	<0.1	0.3	<0.1	0.5	0.8	0.7	0.8	0.7	5.2	<4	<0.4	11	31	17	<0.1	5	36
6439/TP103/0-0.2		<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	12	<0.4	21	10	17	<0.1	5	14
6439/TP104/0-0.2		<25	<25	<50	<50	150	190	340	<0.2	<0.5	<1	<2	<1	<3	0.5	<0.1	<0.1	<0.1	0.2	0.3	0.3	0.2	<0.1	0.3	<0.1	0.2	<0.1	0.1	0.3	<0.5	<0.5	<0.5	2.4	<4	<0.4	11	15	15	<0.1	6	55
6439/TP105/0-0.2		<25	<25	<50	<50	140	200	340	<0.2	<0.5	<1	<2	<1	<3	0.5	<0.1	<0.1	<0.1	0.3	0.3	0.3	0.3	<0.1	0.4	<0.1	0.2	<0.1	0.2	0.5	<0.5	0.5	<0.5	3	<4	<0.4	13	29	19	<0.1	8	42
6439/TP106/0-0.2		<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	6	<0.4	15	6	15	<0.1	5	17
6439/TP107/0-0.2		<25	<25	<50	<50	100	<100	100	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	6	<0.4	13	12	18	<0.1	8	22
6439/TP108/0-0.2		<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	12	<0.4	18	11	20	<0.1	6	16
6439/TP109/0.3-0.5		<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	11	<0.4	17	10	20	<0.1	5	15
6439/TP111/0-0.2		<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	9	<0.4	17	11	27	<0.1	7	95
6439/TP112/0-0.2		<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	10	<0.4	21	20	36	<0.1	7	210
6439/TP114/0.5-0.7		<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	11	<0.4	16	16	16	<0.1	5	30
6439/TP116/0-0.2		<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	10	<0.4	8	19	13	<0.1	6	58
6439/TP117/0.5-0.7		<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	8	<0.4	8	21	13	<0.1	8	45
6439/TP119/0-0.2		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	<0.4	18	23	27	<0.1	7	190
6439/TP120/0.5-0.7		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	<0.4	15	24	16	<0.1	5	31
6439/TP121/0.8-1.0		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	<0.4	18	19	17	<0.1	6	29
6439/TP122/0-0.2		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	<0.4	10	31	13	<0.1	4	37
6439/TP123/0-0.2		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	<0.4	30	17	18	<0.1	9	110
6439/TP124/0-0.2		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	<0.4	20	25	67	<0.1	9	110
6439/TP125/0.5-0.7		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	<0.4	16	20	16	<0.1	7	39
6439/TP126/0-0.2		<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	7	<0.4	14	17	17	<0.1	5	21
6439/TP127/0-0.2		<25	<25	<50	<50	170	160	330	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	5	<0.4	24	25	14	<0.1	15	41
6439/TP128/0-0.2		<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	6	<0.4	14	17	18	<0.1	5	36
6439/TP129/0-0.2		<25	<25	<50	<50	200	230	430	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	<4	<0.4	16	54	12	<0.1	31	42
6439/TP130/0-0.2		<25	<25	<50	<50	120	<100	120	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	7	<0.4	13	15	19	<0.1	5	23
6439/TP131/0-0.2		<25	<25	<50	<50	100	140	240	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	7	<0.4	16	21	15	<0.1	11	24
6439/TP132/0-0.2		<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	8	<0.4	7	23	12	<0.1	16	77
6439/TP133/0.5-0.7		<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	8	<0.4	14	19	16	<0.1	3	19
6439/TP134/0-0.2		<25	<25	140	140	220	<100	370	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.05	7	<0.4	14	53	53	<0.1	10	82
Statistical Summary																																									
Number of Detects		0	0	1	1	12	7	12	0	0	0	0	0	0	4	0	0	1	3	3	3	3	0	4	0	3	0	3	4	1	2	1	4	37	0	41	41	41	1	41	41
Number of Guideline Exceedances(Detects Only)		0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: Chromium values assessed against Cr(VI) for HIL and Cr(III) for EIL using total chromium. Further assessment is required if total chromium is exceeded.

	Organochlorine Pesticides																								Organophosphorous Pesticides												Other		
	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Hexachlorobenzene	Aldrin and dieldrin	Sum of Endosulfan	Azinophos-methyl	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenitrothion	Malathion	Ronnel	Parathion	Asbestos	pH	CEC
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		-	meq
EQL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Y/N	-	-
NEPM 2013 Table 1A(1) HILs Res A Soil										**240**					**10**			**6**		**300**	**10**	**6**	**270**			**160**												
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay																																						
0-1m																																						
Site Specific EIL									**180**																													
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																																						
0-2m																																						
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																																						
Field_ID																																						
6439/C01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	6.2	8.2
6439/C02	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	7.3	12
6439/C03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/C04	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	6.2	14
6439/C05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	6.1	11
6439/C06	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP253	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP254	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP255	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP257	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP258	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP101/0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP102/0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP103/0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP104/0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP105/0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP106/0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP107/0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP108/0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP109/0.3-0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP111/0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP112/0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP114/0.5-0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP116/0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP117/0.5-0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP119/0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	-	-
6439/TP120/0.5-0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6439/TP121/0.8-1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6439/TP122/0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6439/TP123/0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6439/TP124/0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6439/TP125/0.5-0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6439/TP126/0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	N	-	-
6439/TP127/0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP128/0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP129/0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP130/0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP131/0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP132/0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP133/0.5-0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
6439/TP134/0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Y	-	-
Statistical Summary																																						
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	41	41
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Attachment F Data Validation Report

Sample Handling

Lab Report	Sample chain of custody (COC) procedures	Sample preservation	Sample receipt notification matches COC	Samples analysed within holding time
230737	Pass	Pass	Pass	Pass

Precision / Accuracy

Lab Report	Analysed by Nata laboratory	Trip spike and blank used	Adequate duplicates analysed	Field rinsate analysed
230737	Pass	Pass	Pass	NA

Trip spike and blank were required as volatiles were analysed

Dedicated sampling equipment were used during the investigation, no rinsate was required.

Duplicates/ laboratory QA/QC

Lab Report	Field RPD	Laboratory Surrogate Recovery	Laboratory Duplicate / Triplicate RPD	Lab Blank and Matrix Spike Recovery	Laboratory Control Sample
230737	Pass	Pass	Pass	Pass	Pass
668169	Pass	Pass	NA	Pass	Pass

RPD control limits were exceeded for:

- arsenic, copper and zinc in TP103 and Dup01.
- chromium, lead and zinc in TP116 and Dup02.
- zinc in TP128 and Dup04.
- arsenic, chromium nickel and zinc in TP103 and Trip01.

These samples were in in heterogeneous fill and concentrations were significantly less than the SAC. Therefore, the data is deemed valid for the purpose of this report.

Field Duplicates (SOIL)
Filter: ALL

			Lab Report Number	230737	230737		230737	230737		230737	230737		230737	230737		230737	688169	
			Field ID	6439/TP103/0-0.2	6879/DUP01	**RPD**	6439/TP116/0-0.2	6879/DUP02	**RPD**	6439/TP109/0.3-0.5	6879/DUP03	**RPD**	6439/TP128/0-0.2	6879/DUP04	**RPD**	6439/TP109/0.3-0.5	6879/TRIP01	**RPD**
			Sampled Date/Time															
Chem_Gr	**ChemNam**	**Units**	**EQL**															
Inorganics	Moisture	%	0.1	**16.0**	**9.7**	**49**	**8.8**	**13.0**	**39**	15.0	17.0	13	8.1	8.4	4	15.0	21	17
Metals	Arsenic	mg/kg	4	**12.0**	**<4.0**	**100**	10.0	9.0	11	11.0	13.0	17	6.0	7.0	15	11.0	22	**67**
	Cadmium	mg/kg	0.4	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<0.4	0
	Chromium	mg/kg	1	21.0	16.0	27	**8.0**	**18.0**	**77**	17.0	24.0	34	14.0	13.0	7	17.0	33	**64**
	Copper	mg/kg	1	**10.0**	**19.0**	**62**	19.0	28.0	38	10.0	12.0	18	17.0	22.0	26	10.0	22	**75**
	Lead	mg/kg	1	17.0	18.0	6	**13.0**	**24.0**	**59**	20.0	20.0	0	18.0	22.0	20	20.0	24	18
	Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
	Nickel	mg/kg	1	5.0	5.0	0	6.0	9.0	40	5.0	7.0	33	5.0	4.0	22	5.0	14	**95**
	Zinc	mg/kg	1	**14.0**	**40.0**	**96**	**58.0**	**230.0**	**119**	15.0	22.0	38	**36.0**	**51.0**	**34**	15.0	50	**108**

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 80 (1-10 x EQL); 50 (10-30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Attachment G Laboratory Certificates

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CERTIFICATE OF ANALYSIS 230737

Client Details

Client	Martens & Associates Pty Ltd
Attention	Andrew Norris, William Xu
Address	Suite 201, 20 George St, Hornsby, NSW, 2077

Sample Details

Your Reference	**P1806439, 151 & 161 Tallawong Rd, Rouse Hill**
Number of Samples	71 Soil, 4 Material, 1 Water
Date samples received	13/11/2019
Date completed instructions received	13/11/2019

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	20/11/2019
Date of Issue	26/11/2019
Reissue Details	This report replaces R01 due to amendments to sample ID's.

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Asbestos Approved By

Analysed by Asbestos Approved Identifier: Wonnie Condos, Aida Marner
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By

Greta Petzold, Senior Chemist
Jaimie Loa-Kum-Cheung, Metals Supervisor
Josh Williams, Senior Chemist
Loren Bardwell, Senior Chemist
Lucy Zhu, Senior Asbestos Analyst
Priya Samarawickrama, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		230737-19	230737-20	230737-21	230737-22	230737-23
Your Reference	UNITS	6439/TP226/0-0.2	6439/TP227/0-0.2	6439/TP228/0-0.2	6439/TP229/0-0.2	6439/TP230/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	107	118	111	111	107

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		230737-24	230737-25	230737-26	230737-27	230737-28
Your Reference	UNITS	6439/TP231/0-0.2	6439/TP232/0-0.2	6439/TP233/0.5-0.7	6439/TP234/0-0.2	6439/TP211/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	104	104	113	96	106

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		230737-29	230737-31	230737-33	230737-34	230737-36
Your Reference	UNITS	6439/TP212/0-0.2	6439/TP214/0.5-0.7	6439/TP216/0-0.2	6439/TP217/0.5-0.7	6439/TP253
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	113	111	117	121	121

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		230737-37	230737-38	230737-39	230737-40	230737-41
Your Reference	UNITS	6439/TP254	6439/TP255	6439/TP201/0-0.2	6439/TP202/0-0.2	6439/TP203/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	115	112	119	117	105

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		230737-42	230737-43	230737-44	230737-45	230737-46
Your Reference	UNITS	6439/TP204/0-0.2	6439/TP205/0-0.2	6439/TP206/0-0.2	6439/TP207/0-0.2	6439/TP208/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	111	113	96	104	98

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		230737-47	230737-73	230737-74	230737-75	230737-76
Your Reference	UNITS	6439/TP209/0.3-0.5	Trip Blank 1	Trip Spike 1	Trip Blank 2	Trip Spike 2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
TRH C_6 - C_9	mg/kg	<25	<25	[NA]	<25	[NA]
TRH C_6 - C_{10}	mg/kg	<25	<25	[NA]	<25	[NA]
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	[NA]	<25	[NA]
Benzene	mg/kg	<0.2	<0.2	105%	<0.2	109%
Toluene	mg/kg	<0.5	<0.5	99%	<0.5	109%
Ethylbenzene	mg/kg	<1	<1	100%	<1	103%
m+p-xylene	mg/kg	<2	<2	102%	<2	103%
o-Xylene	mg/kg	<1	<1	102%	<1	104%
naphthalene	mg/kg	<1	<1	[NA]	<1	[NA]
Total +ve Xylenes	mg/kg	<3	<3	[NA]	<3	[NA]
Surrogate aaa-Trifluorotoluene	%	108	111	102%	113	110%

svTRH (C10-C40) in Soil						
Our Reference		230737-19	230737-20	230737-21	230737-22	230737-23
Your Reference	UNITS	6439/TP226/0-0.2	6439/TP227/0-0.2	6439/TP228/0-0.2	6439/TP229/0-0.2	6439/TP230/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	140	<100	190	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	170	<100	200	120
TRH >C_{34} -C_{40}	mg/kg	<100	160	<100	230	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	330	<50	430	120
Surrogate o-Terphenyl	%	105	98	117	94	105

svTRH (C10-C40) in Soil						
Our Reference		230737-24	230737-25	230737-26	230737-27	230737-28
Your Reference	UNITS	6439/TP231/0-0.2	6439/TP232/0-0.2	6439/TP233/0.5-0.7	6439/TP234/0-0.2	6439/TP211/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	200	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	130	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	140	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	140	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	140	<50
TRH >C_{16} -C_{34}	mg/kg	100	<100	<100	220	<100
TRH >C_{34} -C_{40}	mg/kg	140	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	240	<50	<50	370	<50
Surrogate o-Terphenyl	%	83	103	103	108	103

svTRH (C10-C40) in Soil						
Our Reference		230737-29	230737-31	230737-33	230737-34	230737-36
Your Reference	UNITS	6439/TP212/0-0.2	6439/TP214/0.5-0.7	6439/TP216/0-0.2	6439/TP217/0.5-0.7	6439/TP253
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	140
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	190
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	190
Surrogate o-Terphenyl	%	103	101	104	103	112

svTRH (C10-C40) in Soil						
Our Reference		230737-37	230737-38	230737-39	230737-40	230737-41
Your Reference	UNITS	6439/TP254	6439/TP255	6439/TP201/0-0.2	6439/TP202/0-0.2	6439/TP203/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	140	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	130	100	180	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	140	190	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	130	240	370	<50
Surrogate o-Terphenyl	%	103	106	92	85	101

svTRH (C10-C40) in Soil						
Our Reference		230737-42	230737-43	230737-44	230737-45	230737-46
Your Reference	UNITS	6439/TP204/0-0.2	6439/TP205/0-0.2	6439/TP206/0-0.2	6439/TP207/0-0.2	6439/TP208/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	130	140	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	150	140	<100	100	<100
TRH >C_{34} -C_{40}	mg/kg	190	200	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	340	340	<50	100	<50
Surrogate o-Terphenyl	%	92	88	101	102	102

svTRH (C10-C40) in Soil		
Our Reference		230737-47
Your Reference	UNITS	6439/TP209/0.3-0.5
Composite Reference		-
Date Sampled		11-12/11/2019
Type of sample		Soil
Date extracted	-	14/11/2019
Date analysed	-	16/11/2019
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	<100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	101

PAHs in Soil						
Our Reference		230737-19	230737-20	230737-21	230737-22	230737-23
Your Reference	UNITS	6439/TP226/0-0.2	6439/TP227/0-0.2	6439/TP228/0-0.2	6439/TP229/0-0.2	6439/TP230/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	98	94	101	97	97

PAHs in Soil						
Our Reference		230737-24	230737-25	230737-26	230737-27	230737-28
Your Reference	UNITS	6439/TP231/0-0.2	6439/TP232/0-0.2	6439/TP233/0.5-0.7	6439/TP234/0-0.2	6439/TP211/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	95	100	100	102	105

PAHs in Soil						
Our Reference		230737-29	230737-31	230737-33	230737-34	230737-36
Your Reference	UNITS	6439/TP212/0-0.2	6439/TP214/0.5-0.7	6439/TP216/0-0.2	6439/TP217/0.5-0.7	6439/TP253
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	98	98	99	93	99

PAHs in Soil						
Our Reference		230737-37	230737-38	230737-39	230737-40	230737-41
Your Reference	UNITS	6439/TP254	6439/TP255	6439/TP201/0-0.2	6439/TP202/0-0.2	6439/TP203/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	0.5	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.2	0.9	<0.1
Pyrene	mg/kg	<0.1	<0.1	0.2	0.8	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	0.4	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	0.4	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	0.2	0.8	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	0.52	<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	0.4	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	0.50	5.2	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	0.7	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	0.7	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	0.8	<0.5
Surrogate p-Terphenyl-d14	%	101	98	99	99	100

PAHs in Soil						
Our Reference		230737-42	230737-43	230737-44	230737-45	230737-46
Your Reference	UNITS	6439/TP204/0-0.2	6439/TP205/0-0.2	6439/TP206/0-0.2	6439/TP207/0-0.2	6439/TP208/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	0.2	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.3	0.4	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.3	0.5	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.2	0.3	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.2	0.3	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.5	0.5	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.3	0.3	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.2	0.2	<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	0.3	0.3	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	2.4	3.0	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	104	106	105	101	99

PAHs in Soil		
Our Reference		230737-47
Your Reference	UNITS	6439/TP209/0.3-0.5
Composite Reference		-
Date Sampled		11-12/11/2019
Type of sample		Soil
Date extracted	-	14/11/2019
Date analysed	-	16/11/2019
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5
Surrogate p-Terphenyl-d14	%	99

Organochlorine Pesticides in soil						
Our Reference		230737-19	230737-20	230737-21	230737-22	230737-23
Your Reference	UNITS	6439/TP226/0-0.2	6439/TP227/0-0.2	6439/TP228/0-0.2	6439/TP229/0-0.2	6439/TP230/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	101	98	103	98	99

Organochlorine Pesticides in soil						
Our Reference		230737-24	230737-25	230737-26	230737-27	230737-28
Your Reference	UNITS	6439/TP231/0-0.2	6439/TP232/0-0.2	6439/TP233/0.5-0.7	6439/TP234/0-0.2	6439/TP211/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	95	103	101	101	106

Organochlorine Pesticides in soil						
Our Reference		230737-29	230737-31	230737-33	230737-34	230737-36
Your Reference	UNITS	6439/TP212/0-0.2	6439/TP214/0.5-0.7	6439/TP216/0-0.2	6439/TP217/0.5-0.7	6439/TP253
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	99	99	100	93	101

Organochlorine Pesticides in soil						
Our Reference		230737-37	230737-38	230737-39	230737-40	230737-41
Your Reference	UNITS	6439/TP254	6439/TP255	6439/TP201/0-0.2	6439/TP202/0-0.2	6439/TP203/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	102	99	99	99	99

Organochlorine Pesticides in soil						
Our Reference		230737-42	230737-43	230737-44	230737-45	230737-46
Your Reference	UNITS	6439/TP204/0-0.2	6439/TP205/0-0.2	6439/TP206/0-0.2	6439/TP207/0-0.2	6439/TP208/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	103	101	103	99	100

Organochlorine Pesticides in soil						
Our Reference		230737-47	230737-57	230737-58	230737-59	230737-60
Your Reference	UNITS	6439/TP209/0.3-0.5	6439/C01	6439/C02	6439/C03	6439/C04
Composite Reference		-	1 + 2 + 3	4 + 5 + 6	7 + 8 + 9	10 + 11 + 12
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	99	96	99	100	97

Organochlorine Pesticides in soil					
Our Reference		230737-61	230737-62	230737-63	230737-64
Your Reference	UNITS	6439/C05	6439/C06	6439/TP257	6439/TP258
Composite Reference		13 + 14 + 16	15 +17 + 18	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	97	100	105	98

Organophosphorus Pesticides in Soil						
Our Reference		230737-19	230737-20	230737-21	230737-22	230737-23
Your Reference	UNITS	6439/TP226/0-0.2	6439/TP227/0-0.2	6439/TP228/0-0.2	6439/TP229/0-0.2	6439/TP230/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	101	98	103	98	99

Organophosphorus Pesticides in Soil						
Our Reference		230737-24	230737-25	230737-26	230737-27	230737-28
Your Reference	UNITS	6439/TP231/0-0.2	6439/TP232/0-0.2	6439/TP233/0.5-0.7	6439/TP234/0-0.2	6439/TP211/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	95	103	101	101	106

Organophosphorus Pesticides in Soil						
Our Reference		230737-29	230737-31	230737-33	230737-34	230737-36
Your Reference	UNITS	6439/TP212/0-0.2	6439/TP214/0.5-0.7	6439/TP216/0-0.2	6439/TP217/0.5-0.7	6439/TP253
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	99	99	100	93	101

Organophosphorus Pesticides in Soil						
Our Reference		230737-37	230737-38	230737-39	230737-40	230737-41
Your Reference	UNITS	6439/TP254	6439/TP255	6439/TP201/0-0.2	6439/TP202/0-0.2	6439/TP203/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	102	99	99	99	99

Organophosphorus Pesticides in Soil						
Our Reference		230737-42	230737-43	230737-44	230737-45	230737-46
Your Reference	UNITS	6439/TP204/0-0.2	6439/TP205/0-0.2	6439/TP206/0-0.2	6439/TP207/0-0.2	6439/TP208/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	103	101	103	99	100

Organophosphorus Pesticides in Soil						
Our Reference		230737-47	230737-57	230737-58	230737-59	230737-60
Your Reference	UNITS	6439/TP209/0.3-0.5	6439/C01	6439/C02	6439/C03	6439/C04
Composite Reference		-	1 + 2 + 3	4 + 5 + 6	7 + 8 + 9	10 + 11 + 12
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	99	96	99	100	97

Organophosphorus Pesticides in Soil					
Our Reference		230737-61	230737-62	230737-63	230737-64
Your Reference	UNITS	6439/C05	6439/C06	6439/TP257	6439/TP258
Composite Reference		13 + 14 + 16	15 +17 + 18	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	97	100	105	98

PCBs in Soil						
Our Reference		230737-19	230737-20	230737-21	230737-22	230737-23
Your Reference	UNITS	6439/TP226/0-0.2	6439/TP227/0-0.2	6439/TP228/0-0.2	6439/TP229/0-0.2	6439/TP230/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	101	98	103	98	99

PCBs in Soil						
Our Reference		230737-24	230737-25	230737-26	230737-27	230737-28
Your Reference	UNITS	6439/TP231/0-0.2	6439/TP232/0-0.2	6439/TP233/0.5-0.7	6439/TP234/0-0.2	6439/TP211/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	95	103	101	101	106

PCBs in Soil						
Our Reference		230737-29	230737-31	230737-33	230737-34	230737-36
Your Reference	UNITS	6439/TP212/0-0.2	6439/TP214/0.5-0.7	6439/TP216/0-0.2	6439/TP217/0.5-0.7	6439/TP253
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	99	99	100	93	101

PCBs in Soil						
Our Reference		230737-37	230737-38	230737-39	230737-40	230737-41
Your Reference	UNITS	6439/TP254	6439/TP255	6439/TP201/0-0.2	6439/TP202/0-0.2	6439/TP203/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	102	99	99	99	99

PCBs in Soil						
Our Reference		230737-42	230737-43	230737-44	230737-45	230737-46
Your Reference	UNITS	6439/TP204/0-0.2	6439/TP205/0-0.2	6439/TP206/0-0.2	6439/TP207/0-0.2	6439/TP208/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	16/11/2019	16/11/2019	16/11/2019	16/11/2019	16/11/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	103	101	103	99	100

PCBs in Soil		
Our Reference		230737-47
Your Reference	UNITS	6439/TP209/0.3-0.5
Composite Reference		-
Date Sampled		11-12/11/2019
Type of sample		Soil
Date extracted	-	14/11/2019
Date analysed	-	16/11/2019
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate TCMX	%	99

Acid Extractable metals in soil						
Our Reference		230737-19	230737-20	230737-21	230737-22	230737-23
Your Reference	UNITS	6439/TP226/0-0.2	6439/TP227/0-0.2	6439/TP228/0-0.2	6439/TP229/0-0.2	6439/TP230/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Arsenic	mg/kg	7	5	6	<4	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	14	24	14	16	13
Copper	mg/kg	17	25	17	54	15
Lead	mg/kg	17	14	18	12	19
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	5	15	5	31	5
Zinc	mg/kg	21	41	36	42	23

Acid Extractable metals in soil						
Our Reference		230737-24	230737-25	230737-26	230737-27	230737-28
Your Reference	UNITS	6439/TP231/0-0.2	6439/TP232/0-0.2	6439/TP233/0.5-0.7	6439/TP234/0-0.2	6439/TP211/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Arsenic	mg/kg	7	8	8	7	9
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	16	7	14	14	17
Copper	mg/kg	21	23	19	53	11
Lead	mg/kg	15	12	16	53	27
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	11	16	3	10	7
Zinc	mg/kg	24	77	19	82	95

Acid Extractable metals in soil						
Our Reference		230737-29	230737-31	230737-33	230737-34	230737-36
Your Reference	UNITS	6439/TP212/0-0.2	6439/TP214/0.5-0.7	6439/TP216/0-0.2	6439/TP217/0.5-0.7	6439/TP253
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Arsenic	mg/kg	10	11	10	8	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	21	16	8	8	10
Copper	mg/kg	20	16	19	21	19
Lead	mg/kg	36	16	13	13	21
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	7	5	6	8	5
Zinc	mg/kg	210	30	58	45	58

Acid Extractable metals in soil						
Our Reference		230737-37	230737-38	230737-39	230737-40	230737-41
Your Reference	UNITS	6439/TP254	6439/TP255	6439/TP201/0-0.2	6439/TP202/0-0.2	6439/TP203/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Arsenic	mg/kg	7	7	7	<4	12
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	12	14	12	11	21
Copper	mg/kg	17	17	13	31	10
Lead	mg/kg	43	42	17	17	17
Mercury	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	5	5	5	5	5
Zinc	mg/kg	96	42	28	36	14

Acid Extractable metals in soil						
Our Reference		230737-42	230737-43	230737-44	230737-45	230737-46
Your Reference	UNITS	6439/TP204/0-0.2	6439/TP205/0-0.2	6439/TP206/0-0.2	6439/TP207/0-0.2	6439/TP208/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Arsenic	mg/kg	<4	<4	6	6	12
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	11	13	15	13	18
Copper	mg/kg	15	29	6	12	11
Lead	mg/kg	15	19	15	18	20
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	6	8	5	8	6
Zinc	mg/kg	55	42	17	22	16

Acid Extractable metals in soil						
Our Reference		230737-47	230737-48	230737-49	230737-50	230737-51
Your Reference	UNITS	6439/TP209/0.3-0.5	6439/TP219/0-0.2	6439/TP220/0.5-0.7	6439/TP221/0.8-1.0	6439/TP222/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Arsenic	mg/kg	11	7	6	7	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	17	18	15	18	10
Copper	mg/kg	10	23	24	19	31
Lead	mg/kg	20	27	16	17	13
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	5	7	5	6	4
Zinc	mg/kg	15	190	31	29	37

Acid Extractable metals in soil						
Our Reference		230737-52	230737-53	230737-54	230737-57	230737-58
Your Reference	UNITS	6439/TP223/0-0.2	6439/TP224/0-0.2	6439/TP225/0.5-0.7	6439/C01	6439/C02
Composite Reference		-	-	-	1 + 2 + 3	4 + 5 + 6
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Arsenic	mg/kg	9	15	9	8	10
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	30	20	16	14	17
Copper	mg/kg	17	25	20	19	19
Lead	mg/kg	18	67	16	22	21
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	9	9	7	8	8
Zinc	mg/kg	110	110	39	52	54

Acid Extractable metals in soil						
Our Reference		230737-59	230737-60	230737-61	230737-62	230737-63
Your Reference	UNITS	6439/C03	6439/C04	6439/C05	6439/C06	6439/TP257
Composite Reference		7 + 8 + 9	10 + 11 + 12	13 + 14 + 16	15 +17 + 18	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Arsenic	mg/kg	7	8	6	6	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	11	13	11	10	15
Copper	mg/kg	24	12	17	13	19
Lead	mg/kg	16	20	21	17	20
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	9	6	6	5	8
Zinc	mg/kg	53	46	59	38	58

Acid Extractable metals in soil						
Our Reference		230737-64	230737-69	230737-70	230737-71	230737-72
Your Reference	UNITS	6439/TP258	6879/DUP01	6879/DUP02	6879/DUP03	6879/DUP04
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Arsenic	mg/kg	5	<4	9	13	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	13	16	18	24	13
Copper	mg/kg	17	19	28	12	22
Lead	mg/kg	19	18	24	20	22
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	6	5	9	7	4
Zinc	mg/kg	38	40	230	22	51

Acid Extractable metals in soil		
Our Reference		230737-77
Your Reference	UNITS	6439/TP219/0-0.2 - [TRIPLICATE]
Composite Reference		-
Date Sampled		11-12/11/2019
Type of sample		Soil
Date prepared	-	14/11/2019
Date analysed	-	15/11/2019
Arsenic	mg/kg	10
Cadmium	mg/kg	0.4
Chromium	mg/kg	22
Copper	mg/kg	33
Lead	mg/kg	34
Mercury	mg/kg	<0.1
Nickel	mg/kg	9
Zinc	mg/kg	230

Moisture						
Our Reference		230737-19	230737-20	230737-21	230737-22	230737-23
Your Reference	UNITS	6439/TP226/0-0.2	6439/TP227/0-0.2	6439/TP228/0-0.2	6439/TP229/0-0.2	6439/TP230/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Moisture	%	16	12	8.1	7.4	16

Moisture						
Our Reference		230737-24	230737-25	230737-26	230737-27	230737-28
Your Reference	UNITS	6439/TP231/0-0.2	6439/TP232/0-0.2	6439/TP233/0.5-0.7	6439/TP234/0-0.2	6439/TP211/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Moisture	%	15	11	21	13	13

Moisture						
Our Reference		230737-29	230737-31	230737-33	230737-34	230737-36
Your Reference	UNITS	6439/TP212/0-0.2	6439/TP214/0.5-0.7	6439/TP216/0-0.2	6439/TP217/0.5-0.7	6439/TP253
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Moisture	%	13	15	8.8	11	6.6

Moisture						
Our Reference		230737-37	230737-38	230737-39	230737-40	230737-41
Your Reference	UNITS	6439/TP254	6439/TP255	6439/TP201/0-0.2	6439/TP202/0-0.2	6439/TP203/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Moisture	%	6.7	10	8.0	9.0	16

Moisture						
Our Reference		230737-42	230737-43	230737-44	230737-45	230737-46
Your Reference	UNITS	6439/TP204/0-0.2	6439/TP205/0-0.2	6439/TP206/0-0.2	6439/TP207/0-0.2	6439/TP208/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Moisture	%	6.0	6.9	9.5	15	16

Moisture						
Our Reference		230737-47	230737-48	230737-49	230737-50	230737-51
Your Reference	UNITS	6439/TP209/0.3-0.5	6439/TP219/0-0.2	6439/TP220/0.5-0.7	6439/TP221/0.8-1.0	6439/TP222/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Moisture	%	15	13	20	21	11

Moisture						
Our Reference		230737-52	230737-53	230737-54	230737-57	230737-58
Your Reference	UNITS	6439/TP223/0-0.2	6439/TP224/0-0.2	6439/TP225/0.5-0.7	6439/C01	6439/C02
Composite Reference		-	-	-	1 + 2 + 3	4 + 5 + 6
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Moisture	%	23	6.8	15	7.3	8.2

Moisture						
Our Reference		230737-59	230737-60	230737-61	230737-62	230737-63
Your Reference	UNITS	6439/C03	6439/C04	6439/C05	6439/C06	6439/TP257
Composite Reference		7 + 8 + 9	10 + 11 + 12	13 + 14 + 16	15 +17 + 18	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Moisture	%	4.6	16	11	17	40

Moisture						
Our Reference		230737-64	230737-69	230737-70	230737-71	230737-72
Your Reference	UNITS	6439/TP258	6879/DUP01	6879/DUP02	6879/DUP03	6879/DUP04
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Moisture	%	56	9.7	13	17	8.4

Asbestos ID - soils						
Our Reference		230737-19	230737-20	230737-21	230737-22	230737-23
Your Reference	UNITS	6439/TP226/0-0.2	6439/TP227/0-0.2	6439/TP228/0-0.2	6439/TP229/0-0.2	6439/TP230/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Sample mass tested	g	Approx. 30g	Approx. 30g	Approx. 30g	Approx. 35g	Approx. 30g
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		230737-24	230737-25	230737-26	230737-27	230737-28
Your Reference	UNITS	6439/TP231/0-0.2	6439/TP232/0-0.2	6439/TP233/0.5-0.7	6439/TP234/0-0.2	6439/TP211/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Sample mass tested	g	Approx. 30g	Approx. 30g	Approx. 25g	Approx. 25g	Approx. 30g
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		230737-29	230737-31	230737-33	230737-34	230737-36
Your Reference	UNITS	6439/TP212/0-0.2	6439/TP214/0.5-0.7	6439/TP216/0-0.2	6439/TP217/0.5-0.7	6439/TP253
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Sample mass tested	g	Approx. 30g	Approx. 25g	Approx. 30g	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		230737-37	230737-38	230737-39	230737-40	230737-41
Your Reference	UNITS	6439/TP254	6439/TP255	6439/TP201/0-0.2	6439/TP202/0-0.2	6439/TP203/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Sample mass tested	g	Approx. 30g	Approx. 30g	Approx. 30g	Approx. 35g	Approx. 20g
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		230737-42	230737-43	230737-44	230737-45	230737-46
Your Reference	UNITS	6439/TP204/0-0.2	6439/TP205/0-0.2	6439/TP206/0-0.2	6439/TP207/0-0.2	6439/TP208/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Sample mass tested	g	Approx. 35g	Approx. 30g	Approx. 40g	Approx. 40g	Approx. 30g
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		230737-47	230737-48	230737-49	230737-50	230737-51
Your Reference	UNITS	6439/TP209/0.3-0.5	6439/TP219/0-0.2	6439/TP220/0.5-0.7	6439/TP221/0.8-1.0	6439/TP222/0-0.2
Composite Reference		-	-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	15/11/2019	15/11/2019	15/11/2019	15/11/2019	15/11/2019
Sample mass tested	g	Approx. 30g	Approx. 30g	Approx. 30g	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		230737-52	230737-53	230737-54
Your Reference	UNITS	6439/TP223/0-0.2	6439/TP224/0-0.2	6439/TP225/0.5-0.7
Composite Reference		-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil
Date analysed	-	15/11/2019	15/11/2019	15/11/2019
Sample mass tested	g	Approx. 30g	Approx. 40g	Approx. 35g
Sample Description	-	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
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected

Misc Inorg - Soil					
Our Reference		230737-2	230737-6	230737-12	230737-16
Your Reference	UNITS	6439/TP236	6439/TP240	6439/TP246	6439/TP250
Composite Reference		-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	18/11/2019	18/11/2019	18/11/2019	18/11/2019
Date analysed	-	18/11/2019	18/11/2019	18/11/2019	18/11/2019
pH 1:5 soil:water	pH Units	6.2	7.3	6.2	6.1

Asbestos ID - materials					
Our Reference		230737-56	230737-66	230737-67	230737-68
Your Reference	UNITS	6439/TP219/0.1/ >7mm	6439/TP126/MS02	6439/TP134/MS04	6439/SP01/MS03
Composite Reference		-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Material	Material	Material	Material
Date analysed	-	14/11/2019	14/11/2019	14/11/2019	14/11/2019
Mass / Dimension of Sample	-	122.09g	100x80x5mm	80x70x6mm	60x35x6mm
Sample Description	-	Beige fibre cement material	Brown fibre glass	Beige fibre cement material	Beige fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected Amosite asbestos detected	No asbestos detected Synthetic mineral fibres detected Organic fibres detected	Chrysotile asbestos detected Amosite asbestos detected	Chrysotile asbestos detected Amosite asbestos detected
Trace Analysis	-	Not Tested	No asbestos detected	Not Tested	Not Tested

Asbestos ID - soils NEPM - ASB-001		
Our Reference		230737-55
Your Reference	UNITS	6439/TP219/0.1/ <7mm
Composite Reference		-
Date Sampled		11-12/11/2019
Type of sample		Soil
Date analysed	-	15/11/2019
Sample mass tested	g	465.88
Sample Description	-	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected
Total Asbestos#1	g/kg	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected
ACM >7mm Estimation*	g	–
FA and AF Estimation*	g	–
ACM >7mm Estimation*	%(w/w)	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001

CEC					
Our Reference		230737-2	230737-6	230737-12	230737-16
Your Reference	UNITS	6439/TP236	6439/TP240	6439/TP246	6439/TP250
Composite Reference		-	-	-	-
Date Sampled		11-12/11/2019	11-12/11/2019	11-12/11/2019	11-12/11/2019
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	18/11/2019	18/11/2019	18/11/2019	18/11/2019
Date analysed	-	18/11/2019	18/11/2019	18/11/2019	18/11/2019
Exchangeable Ca	meq/100g	4.8	8.1	9.1	7.1
Exchangeable K	meq/100g	0.7	0.6	1.1	1.0
Exchangeable Mg	meq/100g	2.6	3.5	3.4	3.4
Exchangeable Na	meq/100g	<0.1	<0.1	<0.1	<0.1
Cation Exchange Capacity	meq/100g	8.2	12	14	11

Miscellaneous Inorganics		
Our Reference		230737-65
Your Reference	UNITS	6439/SW01
Composite Reference		-
Date Sampled		11-12/11/2019
Type of sample		Water
Date prepared	-	13/11/2019
Date analysed	-	13/11/2019
Total Nitrogen in water	mg/L	0.9
pH	pH Units	8.8
Electrical Conductivity	µS/cm	330

HM in water - total		
Our Reference		230737-65
Your Reference	UNITS	6439/SW01
Composite Reference		-
Date Sampled		11-12/11/2019
Type of sample		Water
Date prepared	-	15/11/2019
Date analysed	-	15/11/2019
Arsenic-Total	µg/L	2
Cadmium-Total	µg/L	<0.1
Chromium-Total	µg/L	<1
Copper-Total	µg/L	1
Lead-Total	µg/L	<1
Mercury-Total	µg/L	<0.05
Nickel-Total	µg/L	<1
Zinc-Total	µg/L	4

Metals in Waters - Total		
Our Reference		230737-65
Your Reference	UNITS	6439/SW01
Composite Reference		-
Date Sampled		11-12/11/2019
Type of sample		Water
Date prepared	-	15/11/2019
Date analysed	-	15/11/2019
Phosphorus - Total	mg/L	<0.05

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. **NOTE** #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF) **NOTE** #2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
AT-008	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25°C in accordance with APHA latest edition 2510 and Rayment & Lyons.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-055/062/127	Total Nitrogen - Calculation sum of TKN and oxidised Nitrogen. Alternatively analysed by combustion and chemiluminescence.
Metals-009	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-AES analytical finish.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.

Method ID	Methodology Summary
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-012/017	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS.
Org-012/017	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS and/or GC-MS/MS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-012/017	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	230737-20
Date extracted	-			14/11/2019	19	14/11/2019	14/11/2019		14/11/2019	14/11/2019
Date analysed	-			14/11/2019	19	14/11/2019	14/11/2019		14/11/2019	14/11/2019
TRH C_6 - C_9	mg/kg	25	Org-016	<25	19	<25	<25	0	99	80
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	19	<25	<25	0	99	80
Benzene	mg/kg	0.2	Org-016	<0.2	19	<0.2	<0.2	0	88	77
Toluene	mg/kg	0.5	Org-016	<0.5	19	<0.5	<0.5	0	90	72
Ethylbenzene	mg/kg	1	Org-016	<1	19	<1	<1	0	101	79
m+p-xylene	mg/kg	2	Org-016	<2	19	<2	<2	0	108	89
o-Xylene	mg/kg	1	Org-016	<1	19	<1	<1	0	106	82
naphthalene	mg/kg	1	Org-014	<1	19	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	117	19	107	115	7	108	118

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	230737-42
Date extracted	-			[NT]	31	14/11/2019	14/11/2019		14/11/2019	14/11/2019
Date analysed	-			[NT]	31	14/11/2019	14/11/2019		14/11/2019	14/11/2019
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	31	<25	<25	0	101	93
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	31	<25	<25	0	101	93
Benzene	mg/kg	0.2	Org-016	[NT]	31	<0.2	<0.2	0	95	93
Toluene	mg/kg	0.5	Org-016	[NT]	31	<0.5	<0.5	0	94	86
Ethylbenzene	mg/kg	1	Org-016	[NT]	31	<1	<1	0	100	92
m+p-xylene	mg/kg	2	Org-016	[NT]	31	<2	<2	0	108	98
o-Xylene	mg/kg	1	Org-016	[NT]	31	<1	<1	0	109	100
naphthalene	mg/kg	1	Org-014	[NT]	31	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	31	111	119	7	115	99

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	41	14/11/2019	14/11/2019		[NT]	[NT]
Date analysed	-			[NT]	41	14/11/2019	14/11/2019		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	41	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	41	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-016	[NT]	41	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-016	[NT]	41	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-016	[NT]	41	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-016	[NT]	41	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-016	[NT]	41	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-014	[NT]	41	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	41	105	112	6	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	230737-20
Date extracted	-			14/11/2019	19	14/11/2019	14/11/2019		14/11/2019	14/11/2019
Date analysed	-			16/11/2019	19	16/11/2019	16/11/2019		16/11/2019	16/11/2019
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	19	<50	<50	0	109	107
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	19	<100	<100	0	114	106
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	19	<100	<100	0	121	#
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	19	<50	<50	0	109	107
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	19	<100	<100	0	114	106
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	19	<100	<100	0	121	#
Surrogate o-Terphenyl	%		Org-003	104	19	105	104	1	109	98

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	230737-42
Date extracted	-			[NT]	31	14/11/2019	14/11/2019		14/11/2019	14/11/2019
Date analysed	-			[NT]	31	16/11/2019	16/11/2019		16/11/2019	16/11/2019
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	31	<50	<50	0	100	105
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	31	<100	<100	0	107	113
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	31	<100	<100	0	121	#
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	31	<50	<50	0	100	105
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	31	<100	<100	0	107	113
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	31	<100	<100	0	121	#
Surrogate o-Terphenyl	%		Org-003	[NT]	31	101	108	7	101	94

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	41	14/11/2019	14/11/2019		[NT]	[NT]
Date analysed	-			[NT]	41	16/11/2019	16/11/2019		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	41	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	41	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	41	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	41	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	41	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	41	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-003	[NT]	41	101	100	1	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	230737-20
Date extracted	-			14/11/2019	19	14/11/2019	14/11/2019		14/11/2019	14/11/2019
Date analysed	-			16/11/2019	19	16/11/2019	16/11/2019		16/11/2019	16/11/2019
Naphthalene	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	112	110
Acenaphthylene	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	102	99
Phenanthrene	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	102	99
Anthracene	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	98	93
Pyrene	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	100	92
Benzo(a)anthracene	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	106	104
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012/017	<0.2	19	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012/017	<0.05	19	<0.05	<0.05	0	104	99
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	99	19	98	101	3	95	89

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	230737-42
Date extracted	-			[NT]	31	14/11/2019	14/11/2019		14/11/2019	14/11/2019
Date analysed	-			[NT]	31	16/11/2019	16/11/2019		16/11/2019	16/11/2019
Naphthalene	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	108	105
Acenaphthylene	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	102	95
Phenanthrene	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	102	90
Anthracene	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	96	80
Pyrene	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	98	83
Benzo(a)anthracene	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	104	92
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012/017	[NT]	31	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012/017	[NT]	31	<0.05	<0.05	0	96	77
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	[NT]	31	98	96	2	94	88

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	41	14/11/2019	14/11/2019		[NT]	[NT]
Date analysed	-			[NT]	41	16/11/2019	16/11/2019		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012/017	[NT]	41	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012/017	[NT]	41	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	[NT]	41	100	97	3	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	230737-20
Date extracted	-			14/11/2019	19	14/11/2019	14/11/2019		14/11/2019	14/11/2019
Date analysed	-			16/11/2019	19	16/11/2019	16/11/2019		16/11/2019	16/11/2019
alpha-BHC	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	96	102
HCB	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	96	85
gamma-BHC	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	90	90
delta-BHC	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	102	102
Heptachlor Epoxide	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	100	93
gamma-Chlordane	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	102	93
Dieldrin	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	106	104
Endrin	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	100	91
Endosulfan II	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	90	88
Endrin Aldehyde	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	92	90
Methoxychlor	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	101	19	101	102	1	91	88

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	230737-42
Date extracted	-			[NT]	31	14/11/2019	14/11/2019		14/11/2019	14/11/2019
Date analysed	-			[NT]	31	16/11/2019	16/11/2019		16/11/2019	16/11/2019
alpha-BHC	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	108	102
HCB	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	90	84
gamma-BHC	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	90	84
delta-BHC	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	104	95
Heptachlor Epoxide	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	96	94
gamma-Chlordane	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	96	94
Dieldrin	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	114	107
Endrin	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	94	99
Endosulfan II	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	92	90
Endrin Aldehyde	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	86	75
Methoxychlor	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	31	99	97	2	90	83

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	41	14/11/2019	14/11/2019		[NT]	[NT]
Date analysed	-			[NT]	41	16/11/2019	16/11/2019		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	41	99	98	1	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	230737-20
Date extracted	-			14/11/2019	19	14/11/2019	14/11/2019		14/11/2019	14/11/2019
Date analysed	-			16/11/2019	19	16/11/2019	16/11/2019		16/11/2019	16/11/2019
Dichlorvos	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	104	113
Dimethoate	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	120	120
Fenitrothion	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	86	91
Malathion	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	94	118
Chlorpyriphos	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	130	129
Parathion	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	118	105
Bromophos-ethyl	mg/kg	0.1	AT-008	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	108	112
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-012/017	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	101	19	101	102	1	91	88

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	230737-42
Date extracted	-			[NT]	31	14/11/2019	14/11/2019		14/11/2019	14/11/2019
Date analysed	-			[NT]	31	16/11/2019	16/11/2019		16/11/2019	16/11/2019
Dichlorvos	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	110	119
Dimethoate	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	122	115
Fenitrothion	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	98	94
Malathion	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	124	126
Chlorpyriphos	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	116	112
Parathion	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	120	114
Bromophos-ethyl	mg/kg	0.1	AT-008	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	116	114
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-012/017	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	31	99	97	2	90	83

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	41	14/11/2019	14/11/2019		[NT]	[NT]
Date analysed	-			[NT]	41	16/11/2019	16/11/2019		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	AT-008	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-012/017	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	41	99	98	1	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	230737-20
Date extracted	-			14/11/2019	19	14/11/2019	14/11/2019		14/11/2019	14/11/2019
Date analysed	-			16/11/2019	19	16/11/2019	16/11/2019		16/11/2019	16/11/2019
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	19	<0.1	<0.1	0	86	77
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	19	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	101	19	101	102	1	91	88

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	230737-42
Date extracted	-			[NT]	31	14/11/2019	14/11/2019		14/11/2019	14/11/2019
Date analysed	-			[NT]	31	16/11/2019	16/11/2019		16/11/2019	16/11/2019
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	31	<0.1	<0.1	0	89	87
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	[NT]	31	99	97	2	90	83

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	41	14/11/2019	14/11/2019		[NT]	[NT]
Date analysed	-			[NT]	41	16/11/2019	16/11/2019		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	[NT]	41	99	98	1	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	230737-20
Date prepared	-			14/11/2019	19	14/11/2019	14/11/2019		14/11/2019	14/11/2019
Date analysed	-			15/11/2019	19	15/11/2019	15/11/2019		15/11/2019	15/11/2019
Arsenic	mg/kg	4	Metals-020	<4	19	7	7	0	106	92
Cadmium	mg/kg	0.4	Metals-020	<0.4	19	<0.4	<0.4	0	104	85
Chromium	mg/kg	1	Metals-020	<1	19	14	14	0	115	82
Copper	mg/kg	1	Metals-020	<1	19	17	17	0	108	111
Lead	mg/kg	1	Metals-020	<1	19	17	20	16	116	83
Mercury	mg/kg	0.1	Metals-021	<0.1	19	<0.1	<0.1	0	91	70
Nickel	mg/kg	1	Metals-020	<1	19	5	5	0	95	79
Zinc	mg/kg	1	Metals-020	<1	19	21	29	32	106	#

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	230737-42
Date prepared	-			[NT]	31	14/11/2019	14/11/2019		14/11/2019	14/11/2019
Date analysed	-			[NT]	31	15/11/2019	15/11/2019		15/11/2019	15/11/2019
Arsenic	mg/kg	4	Metals-020	[NT]	31	11	10	10	100	79
Cadmium	mg/kg	0.4	Metals-020	[NT]	31	<0.4	<0.4	0	100	72
Chromium	mg/kg	1	Metals-020	[NT]	31	16	16	0	107	77
Copper	mg/kg	1	Metals-020	[NT]	31	16	17	6	104	79
Lead	mg/kg	1	Metals-020	[NT]	31	16	15	6	109	#
Mercury	mg/kg	0.1	Metals-021	[NT]	31	<0.1	<0.1	0	86	85
Nickel	mg/kg	1	Metals-020	[NT]	31	5	5	0	92	#
Zinc	mg/kg	1	Metals-020	[NT]	31	30	34	12	101	#

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-13	230737-70
Date prepared	-			[NT]	41	14/11/2019	14/11/2019		14/11/2019	14/11/2019
Date analysed	-			[NT]	41	15/11/2019	15/11/2019		15/11/2019	15/11/2019
Arsenic	mg/kg	4	Metals-020	[NT]	41	12	12	0	111	83
Cadmium	mg/kg	0.4	Metals-020	[NT]	41	<0.4	<0.4	0	108	85
Chromium	mg/kg	1	Metals-020	[NT]	41	21	19	10	120	81
Copper	mg/kg	1	Metals-020	[NT]	41	10	10	0	115	86
Lead	mg/kg	1	Metals-020	[NT]	41	17	19	11	120	#
Mercury	mg/kg	0.1	Metals-021	[NT]	41	<0.1	<0.1	0	89	83
Nickel	mg/kg	1	Metals-020	[NT]	41	5	6	18	100	70
Zinc	mg/kg	1	Metals-020	[NT]	41	14	14	0	111	#

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	48	14/11/2019	14/11/2019		[NT]	[NT]
Date analysed	-			[NT]	48	15/11/2019	15/11/2019		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	48	7	8	13	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	48	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	48	18	38	71	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	48	23	31	30	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	48	27	30	11	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	48	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	48	7	19	92	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	48	190	220	15	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	64	14/11/2019	14/11/2019		[NT]	[NT]
Date analysed	-			[NT]	64	15/11/2019	15/11/2019		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	64	5	5	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	64	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	64	13	11	17	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	64	17	17	0	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	64	19	17	11	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	64	6	6	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	64	38	39	3	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	69	14/11/2019	14/11/2019		[NT]	[NT]
Date analysed	-			[NT]	69	15/11/2019	15/11/2019		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	69	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	69	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	69	16	15	6	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	69	19	18	5	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	69	18	22	20	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	69	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	69	5	7	33	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	69	40	41	2	[NT]	[NT]

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date prepared	-			18/11/2019	[NT]	[NT]	[NT]	[NT]	18/11/2019	[NT]
Date analysed	-			18/11/2019	[NT]	[NT]	[NT]	[NT]	18/11/2019	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	[NT]	[NT]	[NT]	[NT]	102	[NT]

QUALITY CONTROL: CEC						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date prepared	-			18/11/2019	[NT]	[NT]	[NT]	[NT]	18/11/2019	[NT]
Date analysed	-			18/11/2019	[NT]	[NT]	[NT]	[NT]	18/11/2019	[NT]
Exchangeable Ca	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	[NT]	[NT]	95	[NT]
Exchangeable K	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Exchangeable Mg	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Exchangeable Na	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	[NT]	[NT]	113	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			13/11/2019	[NT]	[NT]	[NT]	[NT]	13/11/2019	[NT]
Date analysed	-			13/11/2019	[NT]	[NT]	[NT]	[NT]	13/11/2019	[NT]
Total Nitrogen in water	mg/L	0.1	Inorg-055/062/127	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
pH	pH Units		Inorg-001	[NT]	[NT]	[NT]	[NT]	[NT]	101	[NT]
Electrical Conductivity	µS/cm	1	Inorg-002	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]

QUALITY CONTROL: HM in water - total						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date prepared	-			15/11/2019	[NT]	[NT]	[NT]	[NT]	15/11/2019	[NT]
Date analysed	-			15/11/2019	[NT]	[NT]	[NT]	[NT]	15/11/2019	[NT]
Arsenic-Total	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	117	[NT]
Cadmium-Total	µg/L	0.1	Metals-022	<0.1	[NT]	[NT]	[NT]	[NT]	115	[NT]
Chromium-Total	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Copper-Total	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Lead-Total	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Mercury-Total	µg/L	0.05	Metals-021	<0.05	[NT]	[NT]	[NT]	[NT]	103	[NT]
Nickel-Total	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Zinc-Total	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	116	[NT]

QUALITY CONTROL: Metals in Waters - Total						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			15/11/2019	[NT]	[NT]	[NT]	[NT]	15/11/2019	[NT]
Date analysed	-			15/11/2019	[NT]	[NT]	[NT]	[NT]	15/11/2019	[NT]
Phosphorus - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	95	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Asbestos: A portion of the supplied samples were sub-sampled for asbestos analysis according to Envirolab procedures.
We cannot guarantee that these sub-samples are indicative of the entire sample.
Envirolab recommends supplying 40-50g of sample in its own container.
Note: Samples requested for asbestos testing were sub-sampled from jars provided by the client.

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

TRH Soil C10-C40 NEPM - # Percent recovery for the surrogate is not possible to report as the high concentration of analytes in samples 230737-20ms,42ms have caused interference.

Acid Extractable Metals in Soil:
-The laboratory RPD acceptance criteria has been exceeded for 230737-48 for Cr, Ni. Therefore a triplicate result has been issued as laboratory sample number 230737-77.
-# 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.

eurofins | Environment Testing

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Martens & Associates Pty Ltd
Suite 201, 20 George St
Hornsby
NSW 2077

Attention: **W Xu**

Report **688169-S**
Project name 151 AND 161 TALLAWONG ROAD ROUSE HILL NSW
Project ID P1806439
Received Date Nov 14, 2019

Client Sample ID			**6879/TRIP01**
Sample Matrix			**Soil**
Eurofins Sample No.			**S19-No20744**
Date Sampled			**Nov 12, 2019**
Test/Reference	LOR	Unit	
Heavy Metals			
Arsenic	2	mg/kg	22
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	33
Copper	5	mg/kg	22
Lead	5	mg/kg	24
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	14
Zinc	5	mg/kg	50
% Moisture	1	%	21

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Metals M8	Sydney	Nov 19, 2019	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Nov 14, 2019	14 Days
- Method: LTM-GEN-7080 Moisture			

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Company Name: Martens & Associates Pty Ltd
Address: Suite 201, 20 George St
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NSW 2077

Project Name: 151 AND 161 TALLAWONG ROAD ROUSE HILL NSW
Project ID: P1806439

Order No.:
Report #: 688169
Phone: 02 9476 9999
Fax: 02 9476 8767

Received: Nov 14, 2019 1:40 PM
Due: Nov 21, 2019
Priority: 5 Day
Contact Name: W Xu

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Metals M8	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	6879/TRIP01	Nov 12, 2019		Soil	S19-No20744	X	X
Test Counts						1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Heavy Metals									
Arsenic			mg/kg	< 2			2	Pass	
Cadmium			mg/kg	< 0.4			0.4	Pass	
Chromium			mg/kg	< 5			5	Pass	
Copper			mg/kg	< 5			5	Pass	
Lead			mg/kg	< 5			5	Pass	
Mercury			mg/kg	< 0.1			0.1	Pass	
Nickel			mg/kg	< 5			5	Pass	
Zinc			mg/kg	< 5			5	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	98			70-130	Pass	
Cadmium			%	103			70-130	Pass	
Chromium			%	104			70-130	Pass	
Copper			%	106			70-130	Pass	
Lead			%	102			70-130	Pass	
Mercury			%	116			70-130	Pass	
Nickel			%	105			70-130	Pass	
Zinc			%	104			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S19-No25512	NCP	%	122			70-130	Pass	
Cadmium	S19-No25512	NCP	%	125			70-130	Pass	
Chromium	S19-No25512	NCP	%	102			70-130	Pass	
Copper	S19-No25512	NCP	%	103			70-130	Pass	
Lead	S19-No25512	NCP	%	96			70-130	Pass	
Mercury	S19-No22064	NCP	%	108			70-130	Pass	
Nickel	S19-No25512	NCP	%	90			70-130	Pass	
Zinc	S19-No25512	NCP	%	112			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S19-No23863	NCP	mg/kg	7.8	8.2	5.0	30%	Pass	
Cadmium	S19-No23863	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S19-No23863	NCP	mg/kg	15	14	6.0	30%	Pass	
Copper	S19-No23863	NCP	mg/kg	42	40	5.0	30%	Pass	
Lead	S19-No23863	NCP	mg/kg	36	33	8.0	30%	Pass	
Mercury	S19-No23863	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S19-No23863	NCP	mg/kg	17	17	3.0	30%	Pass	
Zinc	S19-No23863	NCP	mg/kg	98	67	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S19-No20608	NCP	%	17	17	1.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Ursula Long	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)

Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Attachment H 95% UCL Calculations

	A	B	C	D	E	F	G	H	I	J	K	L
1	**UCL Statistics for Uncensored Full Data Sets: C6 - C10**											
2												
3	User Selected Options											
4	Date/Time of Computation			22/11/2019 1:39:47 PM								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10												
11	**C0**											
12												
13	**General Statistics**											
14	Total Number of Observations					26	Number of Distinct Observations					2
15							Number of Missing Observations					0
16	Minimum					50	Mean					53.46
17	Maximum					140	Median					50
18	SD					17.65	Std. Error of Mean					3.462
19	Coefficient of Variation					0.33	Skewness					5.099
20												
21	**Normal GOF Test**											
22	Shapiro Wilk Test Statistic					0.202	**Shapiro Wilk GOF Test**					
23	5% Shapiro Wilk Critical Value					0.92	Data Not Normal at 5% Significance Level					
24	Lilliefors Test Statistic					0.539	**Lilliefors GOF Test**					
25	5% Lilliefors Critical Value					0.174	Data Not Normal at 5% Significance Level					
26	**Data Not Normal at 5% Significance Level**											
27												
28	**Assuming Normal Distribution**											
29	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
30	95% Student's-t UCL					59.37	95% Adjusted-CLT UCL (Chen-1995)					62.85
31							95% Modified-t UCL (Johnson-1978)					59.95
32												
33	**Gamma GOF Test**											
34	A-D Test Statistic					9.595	**Anderson-Darling Gamma GOF Test**					
35	5% A-D Critical Value					0.744	Data Not Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic					0.543	**Kolmogrov-Smirnoff Gamma GOF Test**					
37	5% K-S Critical Value					0.171	Data Not Gamma Distributed at 5% Significance Level					
38	**Data Not Gamma Distributed at 5% Significance Level**											
39												
40	**Gamma Statistics**											
41	k hat (MLE)					18.45	k star (bias corrected MLE)					16.35
42	Theta hat (MLE)					2.897	Theta star (bias corrected MLE)					3.27
43	nu hat (MLE)					959.6	nu star (bias corrected)					850.2
44	MLE Mean (bias corrected)					53.46	MLE Sd (bias corrected)					13.22
45							Approximate Chi Square Value (0.05)					783.6
46	Adjusted Level of Significance					0.0398	Adjusted Chi Square Value					779.3
47												
48	**Assuming Gamma Distribution**											
49	95% Approximate Gamma UCL (use when n>=50))					58.01	95% Adjusted Gamma UCL (use when n<50)					58.32
50												
51	**Lognormal GOF Test**											
52	Shapiro Wilk Test Statistic					0.202	**Shapiro Wilk Lognormal GOF Test**					
53	5% Shapiro Wilk Critical Value					0.92	Data Not Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic					0.539	**Lilliefors Lognormal GOF Test**					

	A	B	C	D	E	F	G	H	I	J	K	L
55					5% Lilliefors Critical Value	0.174	Data Not Lognormal at 5% Significance Level					
56	**Data Not Lognormal at 5% Significance Level**											
57												
58	**Lognormal Statistics**											
59					Minimum of Logged Data	3.912				Mean of logged Data		3.952
60					Maximum of Logged Data	4.942				SD of logged Data		0.202
61												
62	**Assuming Lognormal Distribution**											
63					95% H-UCL	57				90% Chebyshev (MVUE) UCL		59.4
64					95% Chebyshev (MVUE) UCL	62.27				97.5% Chebyshev (MVUE) UCL		66.26
65					99% Chebyshev (MVUE) UCL	74.1						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	**Data do not follow a Discernible Distribution (0.05)**											
69												
70	**Nonparametric Distribution Free UCLs**											
71					95% CLT UCL	59.16				95% Jackknife UCL		N/A
72					95% Standard Bootstrap UCL	N/A				95% Bootstrap-t UCL		N/A
73					95% Hall's Bootstrap UCL	N/A				95% Percentile Bootstrap UCL		N/A
74					95% BCA Bootstrap UCL	N/A						
75					90% Chebyshev(Mean, Sd) UCL	63.85				95% Chebyshev(Mean, Sd) UCL		68.55
76					97.5% Chebyshev(Mean, Sd) UCL	75.08				99% Chebyshev(Mean, Sd) UCL		87.9
77												
78	**Suggested UCL to Use**											
79					95% Student's-t UCL	59.37				or 95% Modified-t UCL		59.95
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
83	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
84	For additional insight the user may want to consult a statistician.											
85												