Favelle Faco Cranes Pty Ltd

C/- Bureau SRH Pty Ltd

Detailed Site Investigation: Proposed Warehouse Development- 28 Yarrunga St, Prestons, NSW.

ENVIRONMENTAL

WATER

WASTEWATER

GEOTECHNICAL

CIVIL

PROJECT MANAGEMENT

P1907209JR03V01

November 2019

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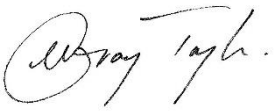
Robert Mehaffey		Brett McLennan Andrew Norris		Gray Taylor			
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All enquiries regarding this project are to be directed to the Project Manager.

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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
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
TB	Trip blank
TBT	Tributyl tin
TCLP	Toxicity characteristics leaching procedure
TEQ	Toxic equivalency factor

HIL	Health investigation level
HM	Heavy metals
HSL	Health screening level
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
MBT	Monobutyltin
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
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
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
WHSP	Work Health and Safety Plan

1 Introduction

1.1 Overview

This report prepared by Martens and Associates (MA) documents a Detailed Site Investigation (DSI) on behalf of Favelle Faco Cranes Pty Ltd C/- Bureau SRH Pty Ltd ('the Client') to support a development application (DA) for the construction of a two storey warehouse development at 28 Yarrunga St, Prestons, NSW ('the site').

A Preliminary Site Investigation (PSI) has previously been prepared for the site by MA (2019), which has identified areas of environmental concern (AEC) and associated contaminants of potential concern (COPC).

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 demolition of existing structures and slab at the site, and construction of a two storey warehouse development with heavy vehicle docks, car parking and associated infrastructure.

The proposed development plans are provided in Attachment B.

1.3 Objectives

The objectives of this DSI are:

- Review site documentation and identify historical and current potentially contaminating site activities.
- Evaluate and assess identified AEC and associated COPC within the IA.
- Provide comment on the suitability of the IA for the proposed commercial land use, and where required, provide recommendations for additional investigations.

1.4 Scope of Works

The scope of works includes:

- Review of PSI (MA, 2019).
- Intrusive subsurface investigation and sampling.

- Laboratory analysis of samples and comparison of results against 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:

- ASC 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) 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	28 Yarrunga Street, Prestons, NSW.
Legal identifier	Lot 2 DP 536915
Approximate area	46,500 m^2 (SIX Maps NSW)
Local Government Area	Liverpool City Council (Council)
Current zoning and land use	Zoned IN3 – Heavy Industrial (Liverpool LEP, 2008). Site is currently used for industrial purposes.
Site description	The site is currently being used to construct cranes and contains a large warehouse in the centre with workshop and storage sheds. A single storey brick building in the southwest portion of the site is used as an administration building. The site is bordered by Yarrunga Street to the south and commercial developments to the north, east and west.
Surrounding land uses	Heavy Industrial uses consisting of large sheds surrounding the site other than an Environmental Conservation (E2) zone to the northwest.
Topography	The site is relatively flat with grades < 5%. Site elevation ranges between approximately 44 mAHD in the southeast to 34 mAHD to the northwest (LIR, 2019).
Geology and soil mapping	The *Penrith 1:100,000 Geological Sheet 9030* describes site geology as Bringelly Shale, containing fine to medium - grained lithic sandstone, rare coal and tuff. The NSW Environment and Heritage eSPADE website identify the site as having soils of the Blacktown Landscape having soils of red and brown podzolic soils (grading to yellow podzolic soils).
Surface hydrology	Drainage of the site is via overland flow and onsite drainage via pit and pipe to the northwest towards Cabramatta Creek.

2.2 Local Meteorology

A summary of local meteorology from closest operational BOM Station with rainfall data at Ingleburn (Station 66190, 1992 to present) and

temperature data at Holsworthy Aerodome (Station 66161, 2012 to present) is provided in Table 2.

Table 2: Meteorological data.

Month	Mean Rainfall (mm)	Mean Maximum Temperature (°C)
January	75.6	32.0
February	93.8	30.1
March	88.7	27.8
April	52.0	27.1
May	49.7	22.8
June	68.5	18.6
July	37.9	19.4
August	42.8	20.7
September	41.8	25.1
October	48.8	26.9
November	71.4	27.8
December	62.0	30.3

2.3 Hydrogeology

A review of WaterNSW Real-time Water Databases indicated that there were no groundwater wells within 500 m of the site.

Groundwater was not encountered during DSI and geotechnical investigations to a maximum investigation depth of 4 m below ground level (mbgl). Groundwater is not considered to be a significant contaminant pathway for the purposes of this investigation.

3 Previous Site Investigations

3.1 Preliminary Site Investigation

A PSI (MA, 2019) was completed for the site, which identified potential sources of contamination. Key findings are summarised in Table 3.

Table 3: PSI (MA, 2019) summary.

Investigation Details	Investigation Task and Finding
Scope of works	o Desktop review 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.
Key findings of historic site review and walkover	Aerials indicate that the site was used for grazing before the current warehouse development was constructed between 1955 and1970. The site walkover identified that: o The site was bordered by Yarrunga Street to the south. o The site was occupied by a workshop in the central portion of the site and office building in the southwest. The site was used for crane machinery and equipment storage. o A diesel underground petroleum storage system (UPSS) was located adjacent to the site entrance along the southern boundary. o Fill material was observed in the northwest, southern and central portions of the site. o Small stockpiles of blast waste material were observed in the northeast, and along the northern boundary of the site. o Fuel, oil and lubricant storage was observed to the south of the workshop, and hydrocarbon staining observed in a number of locations around the storage area. o A crushed aggregate haul road had been constructed around the perimeter of the workshop.
Identified AEC	AEC identified included: A. Existing administration building and previous sheds and dwellings, including a 1 m curtilage. B. Existing workshop areas and slabs, including a 1 m curtilage. C. Diesel UPSS in the southern portion of the site. D. Observed blast waste material in the northeast and along the northern boundary. E. Hydrocarbon storage areas and observed hydrocarbon soil staining. F. Observed fill material of unknown origin or quality. G. Storage areas and general refuse. H. Constructed access / haul road around the workshop. A plan showing AEC locations is provided in Attachment A.
Recommendations	The PSI recommended a DSI be undertaken, incorporating soil sampling and analysis for COPC within the AEC at the site.

4 Conceptual Site Model

The AEC and COPC identified from the review of site documentation are summarised in Table 4. A map showing locations of identified AEC is provided in Attachment A.

Table 4: AEC and COPC.

AEC	Potential for Contamination	COPC
AEC A Administration building and previous dwelling / sheds +1 m curtilage	Pesticides and heavy metals may have been used underneath the dwelling for pest control. Building construction may include PACM, zinc treated (galvanised) metals, and/or lead-based paints.	HM, OCP / OPP and asbestos
AEC B Workshop / sheds (including adjoining slabs) +2 m curtilage	Pesticides and heavy metals may have been used underneath existing and past garage/sheds for pest control. Building construction may include PACM, zinc treated (galvanised) metals, and lead-based paints. Sheds may have previously stored fuels, oils and chemicals.	HM, TRH, BTEXN, PAH, OCP / OPP and asbestos
AEC C Diesel UPSS	Fuel may have leaked or spilled into the surroundings.	TRH, BTEXN, PAH and HM
AEC D Blast waste material	Heavy metals may have accumulated during the grit blasting process.	HM
AEC E Surface staining and hydrocarbon storage	Storage of hydrocarbons may have leaked or spilled into the surrounding soil.	HM, TRH, BTEXN and PAH
AEC F Fill areas	The site contains fill material of unknown origin.	HM, TRH, BTEXN, PAH, OCP / OPP and asbestos
AEC G Storage areas	Storage of equipment may have leaked hydrocarbons.	HM, TRH, BTEXN and PAH
AEC H Haul road	Haul road may contain PACM in the crushed aggregate.	Asbestos

A conceptual site model (CSM) based on the AEC and COPC identified in Table 4, and the associated exposure pathways to potential receptors are summarised in Table 5.

Table 5: 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. Inhalation of contaminated media (e.g. dust).	<u>Possible Human Receptors</u> Current or future site users such as workers and visitors. On and off-site construction or maintenance workers. Current or future users of surrounding premises. <u>Possible Environmental Receptors</u> Flora and fauna that may inhabit or migrate through the site. Contaminant pathway / sink areas. Surface water sinks 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 employees. Current or future users of surrounding commercial or industrial premises.

5 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 quality assurance and quality control (QA/QC).

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

5.1 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 6.

Table 6: Data quality objectives.

Step 1 **Stating the Problem**	Review of previous site documentation identified heavy metals, pesticides, asbestos and hydrocarbons that might be accessible to human and environmental receptors during construction and operation of the proposed warehouse development. 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 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 investigation area boundary. o Vertical – Vertical boundary is governed by the maximum depth reached during subsurface investigations. o Temporal – One round of soil 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.

5.2 Data Quality Indicators

In accordance with NSW EPA (2017), the investigation data set has been compared with DQI outlined in Table 7 to ensure that collected data meets the project needs and that DQO has been met.

Table 7: 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 spike, trip blank, 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.

5.3 Methodology and Quality Assurance / Quality Control

Site investigation and soil sampling methodology as shown in Table 8, was completed to meet the project DQO.

Table 8: Investigation and sampling methodology.

Activity	Detail / Comments
Fieldworks	Surface and subsurface soil investigations were completed on 8 October 2019 and involved: o Boring of 26 boreholes (BH201 - 226) using a 4wd ute mounted drill rig to a maximum investigation depth of 1.7 metres below ground level (mbgl). o Collection of 35 near surface soil samples across the site. o Field screening of soil samples for volatiles using a photo ionisation detector (PID). o Laboratory analysis of representative soil samples. o Collection of five QA / QC samples for laboratory analysis. Soil sampling locations are shown in Attachment A and borehole logs are provided in Attachment C.
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.
QA / QC sampling	QA samples were collected for the initial investigation as follows: o Five soil duplicate sample was collected for intra-laboratory analysis during investigations. o One soil trip blank and one trip spike sample were used during soil sampling.
Sample handling and transport	Sample collection, storage and transport were conducted according to MA SOP. Collected soil 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.

5.4 Laboratory Analytical Suite

Laboratory analysis was carried out by Envirolab Pty Ltd (a NATA accredited laboratory). Laboratory analyses is summarised in Table 9.

Table 9: Summary of soil laboratory analyses.

COPC	Primary Samples Analysed	QA/QC Samples Analysed
BTEXN	36	1 trip spike
TRH	36	1 trip blank
PAH	36	
Heavy metals[1]	36	5 duplicate samples
OCP / OPP	36	
PCB[2]	18	
CEC and pH[3]	4	
Asbestos in soil	20	

Notes:

1. Heavy metals – arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc.
2. While PCB was not a COPC, it was analysed as part of the laboratory suite.
3. CEC and pH were analysed for EIL calculations and to assist in determining physiochemical interactions.

Laboratory chain of custody documentation are provided in Attachment F.

6 Site Assessment Criteria

The site assessment criteria (SAC) adopted for this DSI listed in Table 10 were derived from the NEPM (2013).

Table 10: Site assessment criteria.

Media	Adopted Guidelines	Applicability
Soil	ASC NEPM (2013)	Health investigation levels (HIL) HIL D – Commercial / industrial was adopted based on the proposed land use. Health screening levels (HSL) HSL D – Commercial / industrial land use for sand was adopted based on granular natural and fill material as a conservative measure. Management Limits Commercial / industrial use, coarse soil Asbestos Asbestos in soil assessed on a detect / non-detect basis.

Ecological investigation and screening limits (EIL and ESL) have not been considered for this assessment as the proposed development is sealed and will remove access to soil.

7 Results

7.1 General Field Observations

Field investigations and detailed site walkover were undertaken on 8 October 2019. All locations were examined for signs of contamination (odours, staining etc.). The following observations were made:

- The site was occupied by a crane manufacturing facility comprising of a large warehouse, several smaller storage areas, administration offices, carparking and storage yard.
- There were little changes to the site from the PSI (MA, 2019) walkover findings.
- Potential asbestos containing material (PACM) was observed at the site surface, to the north of the administration buildings, which are considered to be asbestos containing for the purposes of this assessment.
- Borehole investigations identified fill material in eight boreholes, to a maximum depth of 0.6 mbgl.
- Field screening of volatiles found PID results ranging from 0.6 – 4.0 parts per million (ppm).
- Soil staining was only observed in near surface soils around hydrocarbon storage areas, as observed in the PSI (MA, 2019) walkover. No staining or odours were encountered during borehole investigations.
- Access to soil beneath existing structures (AEC A and AEC B) was unavailable at time of investigation, and are regarded as data gaps.

7.2 Soil Conditions

Intrusive investigations of 26 boreholes were undertaken 8 October 2019. Subsurface conditions generally consisted of fill and alluvial soils sandy clay and sandy silt topsoils, underlain by residual clay observed to a maximum investigation depth of 1.7 mbgl.

Fill material of various compositions were encountered at eight borehole locations, with a maximum observed fill depth of 0.6 mbgl.

Borehole locations are shown on the sampling plan in Attachment A and borehole logs are provided in Attachment C.

7.3 Analytical Results

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

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

7.3.1 Soil Results

Laboratory analytical results are summarised in Table 11.

Table 11: Summary of soil analytical results.

Analyte	Results Compared to SAC
Heavy metals	HIL All results below SAC.
TPH/BTEXN	HSL All results below SAC. Management Limits The adopted management limits for TRH fraction C16-C34 (5,000 mg/kg) was exceeded in samples **SS27 (10,000 mg/kg) and SS28 (9,100 mg/kg)**.
OCP/OPP	HIL All results below SAC.
PAH	HIL All results below SAC.
Asbestos in soil	No asbestos detected.

7.3.2 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 E.

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

8 Discussion

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

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

- PACM fragments were observed at the surface to the north of the administration buildings. These fragments are likely to be in the fill profile beneath the building.
- Soil staining was observed in a number of locations across the site.
- No obvious signs of contamination (i.e. potential asbestos fragments, soil staining or significant odours) were noted at depth in boreholes.
- There were little to no changes to the site from the PSI (MA, 2019) walkover.
- PID field screening of soils indicated that volatile compounds in soils were low, with readings ranging between 0.6 – 4.0 ppm.
- Access to soil beneath existing structures (AEC A and AEC B) was unavailable at time of investigation and is considered a data gap in this assessment.

Laboratory analytical results (Envirolab report 227977 and 227977-B) indicated TRH fraction C16-C34 exceeded adopted management limits (5,000 mg/kg) in samples SS27 (10,000 mg/kg) and SS28 (9,100 mg/kg). Samples were collected from near-surface soils beneath a crane, where hydrocarbon staining was observed. It is likely that elevated TRH identified is a result of oil leaks or spills from the crane and impact may be limited to near-surface soils. The depth of hydrocarbon impact is unknown at this stage.

All other soil results were less than the adopted SAC and considered not to pose a signification risk to receptors.

9 Conclusions and Recommendations

Intrusive DSI investigations were undertaken by MA to assess the site to determine the suitability for the proposed warehousing development.

PACM impacted fill to the north of the administration building was identified. It is required that, following demolition of existing structure, this fill material be classified in accordance with NSW EPA (2014) Waste Classification Guidelines and disposed offsite and the extent of asbestos contamination be confirmed and its removal be validated prior to site redevelopment.

Elevated TRH (fraction C16-C34) was identified in two sample locations (SS27 and SS28), where hydrocarbon soil staining was visible at the site surface. It is recommended that, following demolition, further investigations are undertaken in conjunction with data gap closure assessment to delineate the depth and lateral extent of TRH impact in these locations.

A Remediation Action Plan (RAP) is required to guide remediation of the site.

Footprints of existing structures at the site (AEC A and AEC B) have not been assessed due to underlying soil access constraints and have been identified as data gaps in this assessment, as shown in Attachment A. We recommend that an additional site walkover and sampling event is undertaken post demolition of structures to address data gaps. Should contamination be identified, the project RAP shall be amended to address required additional remediation.

If any unexpected finds (such as fibro material, 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).

10 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.

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.

11 References

Bureau SRH Architecture (2019) 28 Yarrunga St, Prestons planset.

Martens and Associates Pty Ltd (2019) *Preliminary Site Investigation: Proposed Warehouse, 28 Yarrunga Street, Prestons, NSW*. Ref. P1907209JR01V01.

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

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

Attachment A **Site Plans**

KEY

- SITE BOUNDARY
- AEC A - ADMINISTRATION BUILDING AND PREVIOUS DWELLING / SHEDS
- AEC B - WORKSHOP / SHEDS (INCLUDING ADJOINING SLABS)
- AEC C - DIESEL UPSS
- AEC D - BLAST WASTE MATERIAL
- AEC E - SURFACE STAINING AND HYDROCARBON STORAGE
- AEC F - FILL AREAS
- AEC G - STORAGE AREAS
- AEC H - INTERNAL ACCESS ROAD

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
A	INITIAL REVISION	25/11/2019	PB	RM		

SCALE
0 7.5 15.0 22.5 30.0 37.5 45.0 52.5 60.0 67.5 75.0 METRES
A1 (A3) 1:750 (1:1,500)

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	GT

CLIENT
FAVELLE FAVCO CRANES PTY LTD

PROJECT NAME/PLANSET TITLE
DETAILED SITE INVESTIGATION

28 YARRUNGA STREET, PRESTONS, NSW

martens & Associates Pty Ltd
Consulting Engineers
Environment
Water
Geotechnical
Civil
Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767
Email: mail@martens.com.au Internet: www.martens.com.au

DRAWING TITLE
FIGURE 1: SITE AEC MAP

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1907209	PS02	R01	PS02-J101	A

PRINTED ---- USER: JSUAREZ
A1 / A3 LANDSCAPE (A1LC_v02.0.01)
DRAWING ID: P1907209-PS02-R01-J101

REV	DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD
A	INITIAL REVISION	25/11/2019	PB	RM		

SCALE
0 7.5 15.0 22.5 30.0 37.5 45.0 52.5 60.0 67.5 75.0 METRES
A1 (A3) 1:750 (1:1,500)

GRID	DATUM	PROJECT MANAGER
MGA	mAHD	GT

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All measurements in millimetres unless otherwise specified.

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PROJECT NAME/PLANSET TITLE
DETAILED SITE INVESTIGATION

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martens & Associates Pty Ltd
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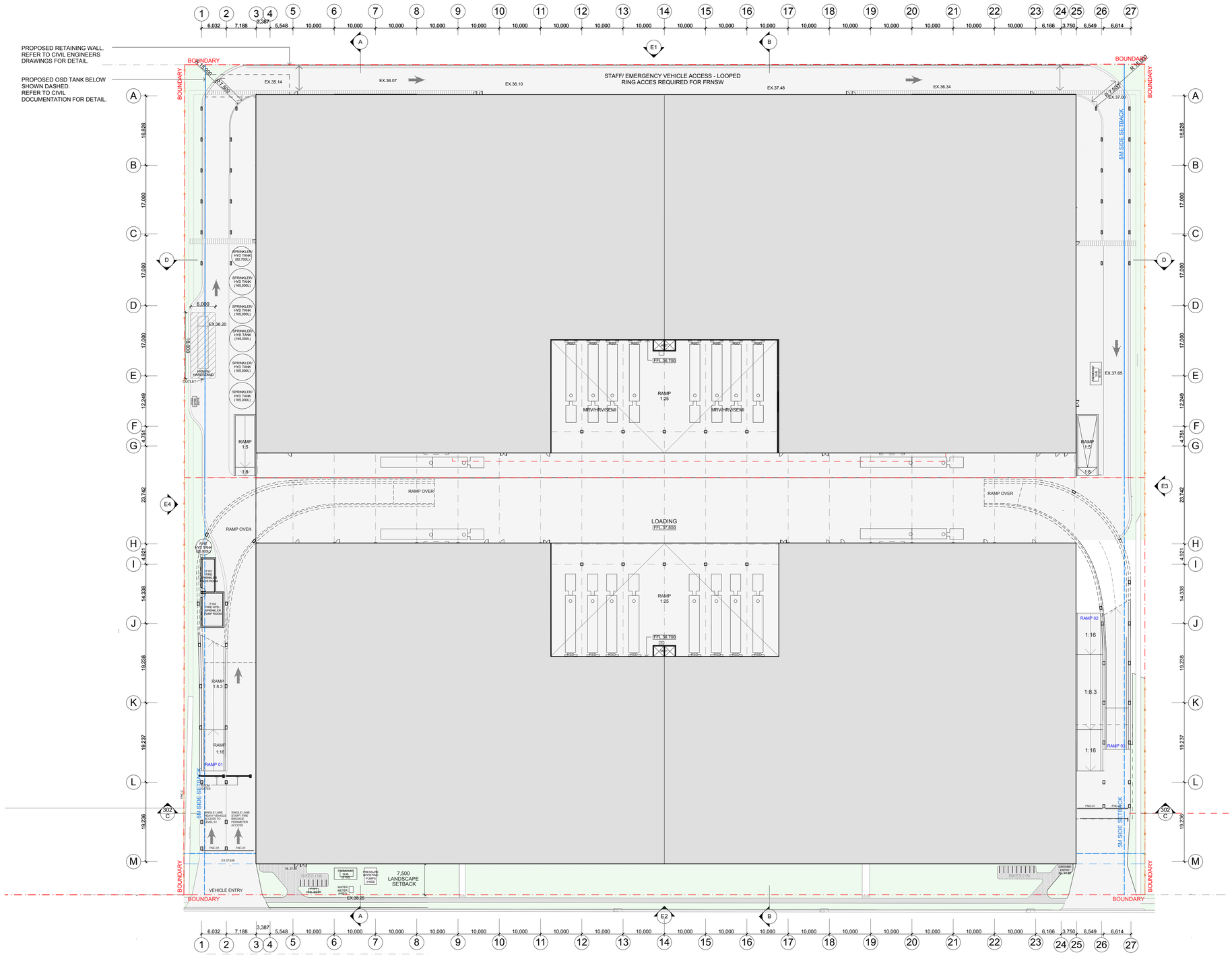
DRAWING TITLE
FIGURE 2: SAMPLING PLAN & IDENTIFIED CONAMINATION

PROJECT NO.	PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
P1907209	PS02	R01	PS02-J102	A

DRAWING ID: P1907209-PS02-R01-J102

PRINTED: --- - USER: ADAMEZ
A1 / A3 LANDSCAPE (A1LC_v02.0.01)

Attachment B **Proposed Development Plans**



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tel +61 2 9380 4666 | admin@bureausrh.com

NOMINATED ARCHITECT:
SIMON HANSON # 6739

LEGEND:

NOT FOR CONSTRUCTION

REV	DATE	NAME
A - WIP	Work in Progress	-

28 YARRUNGA ST, PRESTONS

STAGE:
DESIGN DEVELOPMENT

SCALE:
1:500 @ A1

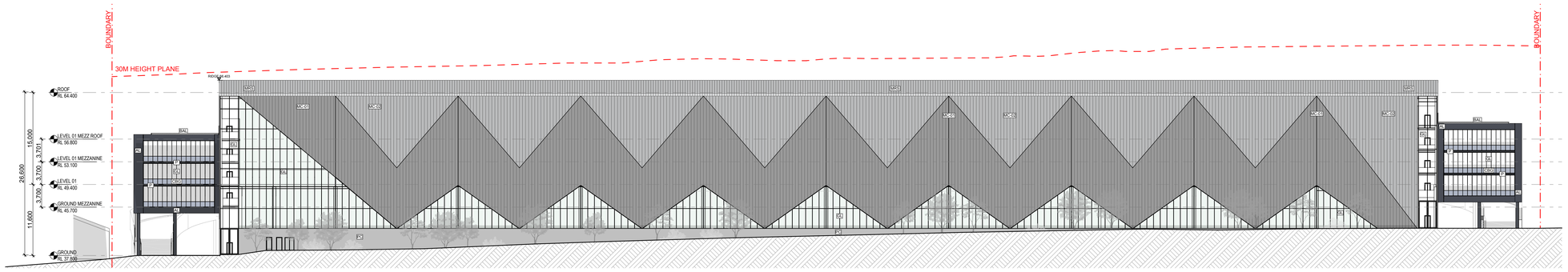
DRAWING TITLE:
STAGE 2- SITE PLAN

CLIENT:	**FAVELLE FAVCO PTY. LTD.**
DRAWN:	**EO**
DATE:	**20/11/2019**
CHECKED:	**SRH**
APPROVED:	**SRH**

PROJECT No: **18144**

DRAWING No:
DA003

REVISION:
A - WIP



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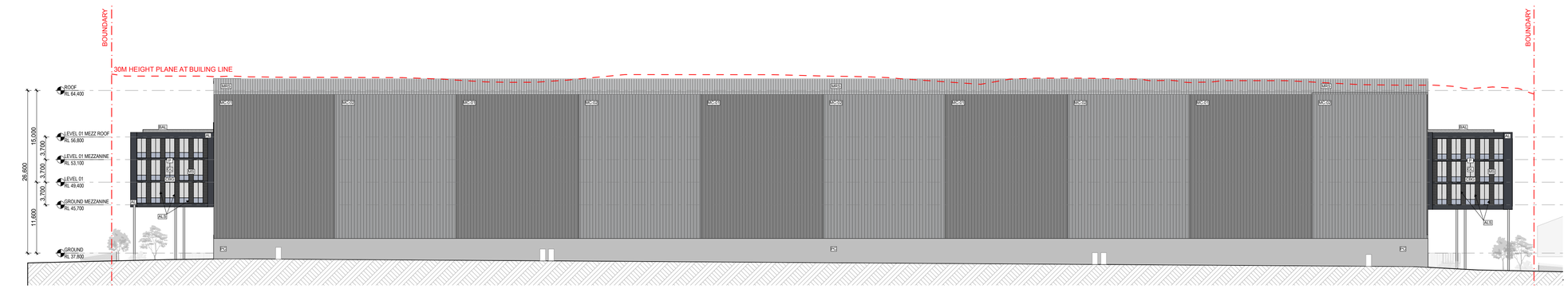

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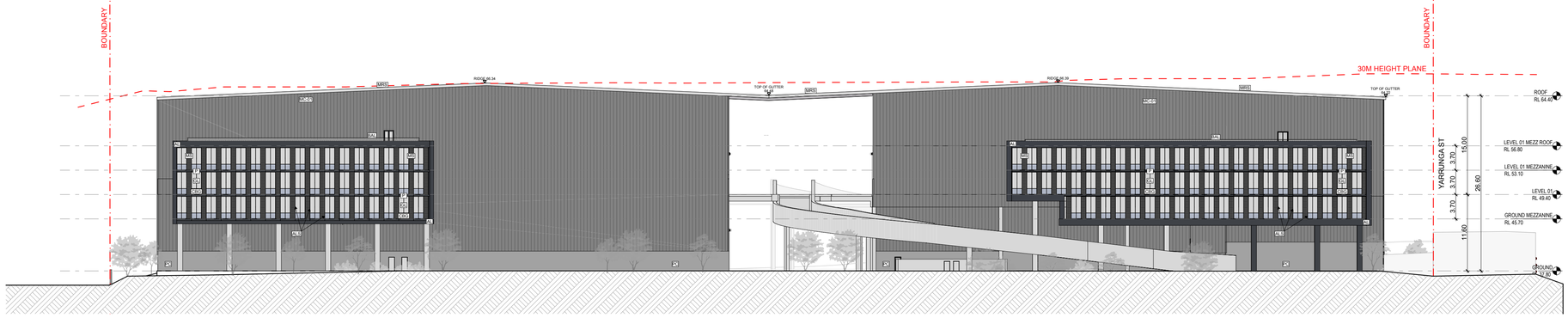

3 WEST ELEVATION S2
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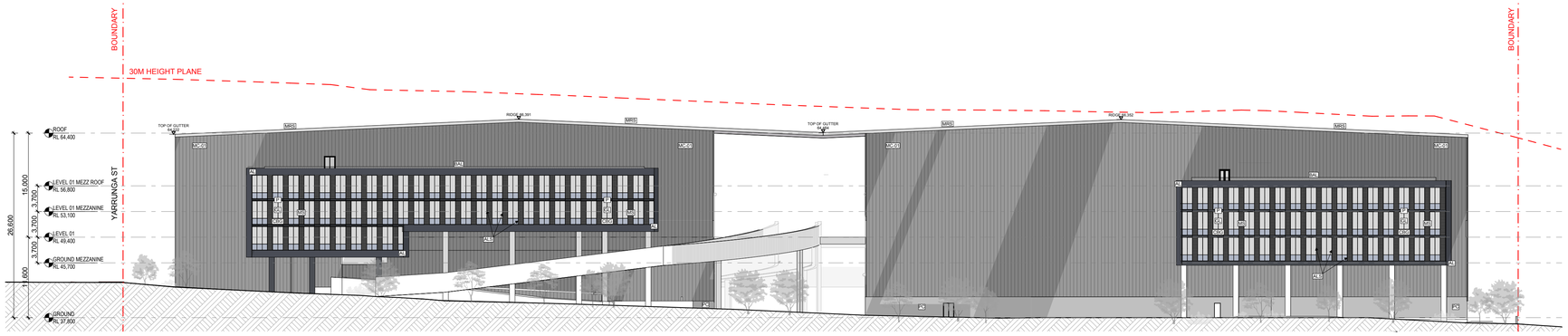

4 EAST ELEVATION S2
1:400

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NOMINATED ARCHITECT:
SIMON HANSON # 6739

LEGEND:

NOT FOR CONSTRUCTION

REV	DATE	NAME
A - WIP	Work in Progress	-

28 YARRUNGA ST, PRESTONS

STAGE:
DESIGN DEVELOPMENT

SCALE:
1:400 @ A1

DRAWING TITLE:
STAGE 2 - ELEVATIONS

CLIENT:	**FAVELLE FAVCO PTY. LTD.**
DRAWN:	**EO**
DATE:	**20/11/2019**
CHECKED:	**SRH**
APPROVED:	**SRH**

PROJECT No: **18144**

DRAWING No:
DA201

REVISION:
A - WIP

YARRUNGA ST PERSPECTIVE

Attachment C **Borehole Logs**

CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH201**
PROJECT	Detailed Site Investigation		LOGGED	RM	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.4274114	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 1.50 m depth	NORTHING	-30.24553154	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V	M	Not Encountered	0.2	0.20	PID 0.10 m 3.9 ppm 7209/BH201/0.1/S/1 D 0.10 m			Cl	FILL: CLAY: medium plasticity; orange/red; with roadbase gravels.		F	FILL
									No roadbase gravels.			
			0.4	0.40				Cl	CLAY: medium plasticity; brown/orange.	M		RESIDUAL SOIL
			0.6		PID 0.50 m 2 ppm 7209/BH201/0.5/S/1 D 0.50 m							
			0.8								F - St	
			1.0		PID 1.00 m 2 ppm 7209/BH201/1.0/S/1 D 1.00 m							
			1.2									
			1.4		PID 1.40 m 4 ppm 7209/BH201/1.4/S/1 D 1.40 m							
				1.50					Hole Terminated at 1.50 m (Target depth reached)			1.50: V-bit refusal.
			1.6									
			1.8									

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Engineering Log - BOREHOLE

CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH202**
PROJECT	Detailed Site Investigation		LOGGED	RM	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42756723	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 1.40 m depth	NORTHING	-30.25022977	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V	M	Not Encountered	0.2	0.20	PID 0.10 m 1.6 ppm 7209/BH202/0.1/S/1 D 0.10 m			CI	FILL: CLAY: medium plasticity; orange/red; with roadbase gravels.		F	FILL
									No roadbase gravels.			
			0.4	0.40				CI	CLAY: medium plasticity; brown/orange.	M	F - St	RESIDUAL SOIL
					PID 0.50 m 1.5 ppm 7209/BH202/0.5/S/1 D 0.50 m							
			0.6									
			0.8									
			1.0		PID 1.00 m 1.4 ppm 7209/BH202/1.0/S/1 D 1.00 m							
			1.2									
			1.4	1.40					Hole Terminated at 1.40 m (Target depth reached)			1.40: V-bit refusal.
			1.6									
			1.8									

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Engineering Log - BOREHOLE

CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH203**
PROJECT	Detailed Site Investigation		LOGGED	RM	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42734193	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 1.70 m depth	NORTHING	-30.25373385	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V	L	Not Encountered	0.2	0.25	PID 0.10 m 0.6 ppm 7209/BH203/0.1/S/1 D 0.10 m			ML	Sandy SILT: low plasticity; dark brown.			RESIDUAL SOIL
			0.4		PID 0.40 m 0.9 ppm 7209/BH203/0.4/S/1 D 0.40 m			CI	CLAY: medium plasticity; red/brown.			
	L-M		0.6	0.60				CL	CLAY: low plasticity; pale brown.	M		
			1.0		PID 1.00 m 1.9 ppm 7209/BH203/1.0/S/1 D 1.00 m							
			1.2									
			1.4									
			1.6		PID 1.50 m 1.5 ppm 7209/BH203/1.5/S/1 D 1.50 m							
				1.70								
			1.8						Hole Terminated at 1.70 m (Target depth reached)			1.70: V-bit refusal.

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

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Engineering Log - BOREHOLE

CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH204**
PROJECT	Detailed Site Investigation		LOGGED	RM	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42785431	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 1.30 m depth	NORTHING	-30.25356191	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V	L	Not Encountered	0.2	0.30	PID 0.10 m 1.5 ppm 7209/BH204/0.1/S/1 D 0.10 m			ML	Sandy SILT: low plasticity; dark brown.	M		RESIDUAL SOIL
	L-M		0.4		PID 0.50 m 1.8 ppm 7209/BH204/0.5/S/1 D 0.50 m			CI	CLAY: medium plasticity; red/brown.			
			0.6									
			0.8	0.90				CL	CLAY: low plasticity; pale grey; trace sandstone gravels.			
	H		1.0		PID 1.00 m 1.4 ppm							
			1.2	1.30								
			1.4						Hole Terminated at 1.30 m (Target depth reached)			1.30: V-bit refusal.
			1.6									
			1.8									

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

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Engineering Log - BOREHOLE

CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH205**
PROJECT	Detailed Site Investigation		LOGGED	RM	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42845126	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 1.30 m depth	NORTHING	-30.25428088	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V		Not Encountered	0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8	*0.13* *1.30*	7209/BH205/0.0-0.1/S/1 D 0.00 m 7209/BH205/0.5-0.6/S/1 D 0.50 m			SC	TOPSOIL: Sandy CLAY: low plasticity; grey-black; with roots.			TOPSOIL
								CL	CLAY: low plasticity; red-brown, mottled with grey.	M		RESIDUAL SOIL
									Hole Terminated at 1.30 m (Target depth reached)			

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

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Engineering Log - BOREHOLE

CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH206**
PROJECT	Detailed Site Investigation		LOGGED	RM	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42880771	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 1.00 m depth	NORTHING	-30.24352544	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V		Not Encountered	0.2		PID 0.10 m 1.6 ppm 7209/BH206/0.1/S/1 D 0.10 m			SC	FILL: Clayey SAND: fine to medium grained; dark brown; with roadbase and sandstone gravels.			FILL
				0.30								
			0.4		PID 0.50 m 1.4 ppm 7209/BH206/0.5/S/1 D 0.50 m			CL	CLAY: low plasticity; brown.			RESIDUAL SOIL
			0.6									
			0.8									
			1.0	*1.00*					Hole Terminated at 1.00 m (Target depth reached)			
			1.2									
			1.4									
			1.6									
			1.8									

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

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Engineering Log - BOREHOLE

CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH207**
PROJECT	Detailed Site Investigation		LOGGED	RM	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42837714	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 1.30 m depth	NORTHING	-30.23983217	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V		Not Encountered	0.2	0.13	7209/BH207/0.2/S/1 D 0.20 m			SC	TOPSOIL: Sandy CLAY: medium to high plasticity; red-brown; with roots.			FILL
			0.4					CL-CI	CLAY: low to medium plasticity; grey mottled with brown; with roots.			RESIDUAL SOIL
			0.6		7209/BH207/0.7-0.8/S/1 D 0.70 m					M		
			0.8									
			1.0									
			1.2	1.30								
			1.4						Hole Terminated at 1.30 m (Target depth reached)			
			1.6									
			1.8									

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

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Engineering Log - BOREHOLE

CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH208**
PROJECT	Detailed Site Investigation		LOGGED	CZ	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.428179	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 1.00 m depth	NORTHING	-30.23668318	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V		Not Encountered	0.2	0.25	7209/BH208/0.1-0.3/S/1 D 0.10 m			SC	Sandy CLAY: low plasticity; brown; with roots; with gravels.			FILL
			0.4						Dark brown.	M		
			0.6	0.60					Dark brown/black.			
			0.8	0.80				CL-CI	CLAY: low to medium plasticity; brown.			RESIDUAL SOIL
			1.0	1.00					Hole Terminated at 1.00 m (Target depth reached)			
			1.2									
			1.4									
			1.6									
			1.8									

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Engineering Log - BOREHOLE

CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH209**
PROJECT	Detailed Site Investigation		LOGGED	CZ	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42770539	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		0.70 m depth	NORTHING	-30.23943281	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
		Not Encountered	0.2		7209/BH208/0.1-0.3/S/1 D 0.10-0.30 m			ML	FILL: SILT: low plasticity; dark grey, trace metal			FILL
			0.4		7209/BH209/0.5-0.7/S/1 D 0.50-0.70 m							
			0.6	*0.60*				CL	Silty CLAY: low plasticity, red / brown mottle.			RESIDUAL SOIL
				0.70					Hole Terminated at 0.70 m (Target depth reached)			
			0.8									
			1.0									
			1.2									
			1.4									
			1.6									
			1.8									

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

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Engineering Log - BOREHOLE

CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH210**
PROJECT	Detailed Site Investigation		LOGGED	CZ	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42728107	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		1.00 m depth	NORTHING	-30.23704761	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
		Not Encountered	0.2	*0.15*	7209/BH210/0-0.2/S/1 D 0.00-0.20 m			CL	FILL: Sandy Silty CLAY: dark brown, low plasticity.			FILL
			0.4		7209/BH210/0.5-0.7/S/1 D 0.50-0.70 m			CL	CLAY: low plasticity, red / brown.			
			0.6									
			0.8									
			1.0	*1.00*					Hole Terminated at 1.00 m (Target depth reached)			
			1.2									
			1.4									
			1.6									
			1.8									

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Engineering Log - BOREHOLE

CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH211**
PROJECT	Detailed Site Investigation		LOGGED	CZ	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42721762	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 0.90 m depth	NORTHING	-30.24474074	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V		Not Encountered	0.2	*0.14*	7209/BH211/0.2-0.3/S/1 D 0.20 m			SM	FILL: Clayey Silty SAND: fine grained; brown; with roots.			FILL
				0.32				ML	FILL: SILT: fine; black-grey.			
			0.4		7209/BH211/0.4-0.5/S/1 D 0.40 m			CL	Sandy Silty CLAY: low plasticity; brown-dark brown; with gravels.			
			0.6		7209/BH211/0.6-0.7/S/1 D 0.60 m							
			0.8	*0.80*				CL	CLAY: low plasticity; brown; with gravels.			
				0.90					Hole Terminated at 0.90 m (Target depth reached)			
			1.0									
			1.2									
			1.4									
			1.6									
			1.8									

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Engineering Log - BOREHOLE

CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH212**
PROJECT	Detailed Site Investigation		LOGGED	CZ	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42834065	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 1.10 m depth	NORTHING	-30.25581839	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V		Not Encountered	0.2	*0.17*	7209/BH212/0.0-0.2/S/1 D 0.00 m			SC	TOPSOIL: Sandy CLAY: low plasticity; brown; with roots and gravels.			FILL
			0.4		7209/BH212/0.5-0.7/S/1 D 0.50 m			CL	CLAY: low plasticity; brown / grey; with gravels.			RESIDUAL SOIL
			0.6									
			0.8									
			1.0	*1.10*								
			1.2						Hole Terminated at 1.10 m (Target depth reached)			
			1.4									
			1.6									
			1.8									

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Engineering Log - BOREHOLE

CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH213**
PROJECT	Detailed Site Investigation		LOGGED	RM	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42823191	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 1.10 m depth	NORTHING	-30.25564091	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V	L	Not Encountered	0.2	0.15	PID 0.10 m 0.4 ppm 7209/BH213/0.1/S/1 D 0.10 m			ML	Clayey SILT: low plasticity; brown.			RESIDUAL SOIL
	M		0.4					CI	CLAY: medium plasticity; red/brown.			
			0.6		PID 0.50 m 0.6 ppm 7209/BH213/0.5/S/1 D 0.50 m					M		
	H		0.8									
			1.0	1.10								
			1.2						Hole Terminated at 1.10 m (Target depth reached)			
			1.4									
			1.6									
			1.8									

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CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH214**
PROJECT	Detailed Site Investigation		LOGGED	RM	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42794266	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 1.10 m depth	NORTHING	-30.25543869	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V		Not Encountered	0.2	0.15	PID 0.10 m 0.5 ppm 7209/BH214/0.1/S/1 D 0.10 m			ML	Clayey SILT: low plasticity; red / grey.		F	RESIDUAL SOIL
			0.4					CI	CLAY: medium plasticity; red / grey.			
			0.6		PID 0.50 m 0.5 ppm 7209/BH214/0.5/S/1 D 0.50 m					M	F - St	
			0.8									
			1.0	1.10								
			1.2						Hole Terminated at 1.10 m (Target depth reached)			
			1.4									
			1.6									
			1.8									

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CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH215**
PROJECT	Detailed Site Investigation		LOGGED	CZ	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42785801	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 1.00 m depth	NORTHING	-30.25531555	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V		Not Encountered	0.2	*0.20*	7209/BH215/0.0-0.2/S/1 D 0.00 m			CL	CLAY: low plasticity; brown mottled with grey; with gravels.			FILL
			0.4					SC	Sandy CLAY: low plasticity; brown; with roots and gravels.			RESIDUAL SOIL
			0.6		7209/BH215/0.5-0.6/S/1 D 0.50 m							
			0.8									
			1.0	*1.00*					Hole Terminated at 1.00 m (Target depth reached)			
			1.2									
			1.4									
			1.6									
			1.8									

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CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH216**
PROJECT	Detailed Site Investigation		LOGGED	CZ	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42884554	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 1.00 m depth	NORTHING	-30.25513526	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V		Not Encountered	0.2	*0.10*	7209/BH216/0.0-0.2/S/1 D 0.00 m			SC	Sandy CLAY: low plasticity; brown; with roots and gravels.			FILL
			0.4		7209/BH216/0.5-0.7/S/1 D 0.50 m			CL	CLAY: low plasticity; brown mottled with grey; with gravels.			RESIDUAL SOIL
			0.6									
			0.8									
			1.0	*1.00*					Hole Terminated at 1.00 m (Target depth reached)			
			1.2									
			1.4									
			1.6									
			1.8									

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CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH217**
PROJECT	Detailed Site Investigation		LOGGED	CZ	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42877829	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 1.10 m depth	NORTHING	-30.25418316	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V		Not Encountered	0.2	*0.17*	7209/BH217/0.1-0.2/S/1 D 0.10 m			SC	Sandy CLAY: low plasticity; brown; with roots and gravels.			FILL
			0.4		7209/BH217/0.5-0.6/S/1 D 0.50 m			CL	CLAY: low plasticity; brown mottled with grey; with gravels.			RESIDUAL SOIL
			0.6									
			0.8									
			1.0	*1.10*								
			1.2						Hole Terminated at 1.10 m (Target depth reached)			
			1.4									
			1.6									
			1.8									

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CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH218**
PROJECT	Detailed Site Investigation		LOGGED	CZ	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42889784	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 1.00 m depth	NORTHING	-30.2519595	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V		Not Encountered	0.2	*0.10*				SW	FILL: SAND: fine grained; dark grey; with gravels.			FILL
				0.20				SW	FILL: SAND: fine to medium grained; dark grey; with gravels, trace charcoal.			
					7209/BH218/0.2-0.3/S/1 D 0.20 m			CL	CLAY: low plasticity; grey mottled with grey; with gravels.			RESIDUAL SOIL
			0.4		7209/BH218/0.4-0.6/S/1 D 0.40 m							
			0.6	*0.60*					Brown and pale grey.			
			0.8									
			1.0	*1.00*					Hole Terminated at 1.00 m (Target depth reached)			
			1.2									
			1.4									
			1.6									
			1.8									

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

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CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH219**
PROJECT	Detailed Site Investigation		LOGGED	CZ	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.428824	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 0.80 m depth	NORTHING	-30.25081984	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V		Not Encountered	0.2	*0.10*	7209/BH219/0.1-0.2/S/1 D 0.10 m			SC	TOPSOIL: Sandy CLAY: low plasticity; brown; with roots.			TOPSOIL
			0.4					SC	Sandy CLAY: low plasticity; brown.			RESIDUAL SOIL
			0.6		7209/BH219/0.6/S/1 D 0.60 m							
			0.8	*0.70*				ML	Clayey SILT: low plasticity; fine; dark grey.			
			1.0	*0.80*					Hole Terminated at 0.80 m (Target depth reached)			
			1.2									
			1.4									
			1.6									
			1.8									

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CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH220**
PROJECT	Detailed Site Investigation		LOGGED	CZ	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42891166	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 1.00 m depth	NORTHING	-30.25052603	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V		Not Encountered	0.2	*0.10*	7209/BH220/0.1-0.2/S/1 D 0.10 m			SC	TOPSOIL: Sandy CLAY: low plasticity; brown; with roots.			TOPSOIL
			0.4					SC	Sandy CLAY: low plasticity; brown.			RESIDUAL SOIL
			0.6	*0.60*	7209/BH220/0.7-0.8/S/1 D 0.70 m			ML	Clayey SILT: low plasticity; fine; dark grey.			
			0.8									
			1.0	*1.00*					Hole Terminated at 1.00 m (Target depth reached)			
			1.2									
			1.4									
			1.6									
			1.8									

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CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH221**
PROJECT	Detailed Site Investigation		LOGGED	CZ	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42883217	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 1.20 m depth	NORTHING	-30.24874992	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V		Not Encountered	0.2	0.10	7209/BH221/0.2-0.3/S/1 D 0.20 m			SC	FILL: Sandy CLAY: low plasticity; brown; with roots.			FILL
								ML	FILL: Clayeys SILT: low plasticity; dark grey; with gravels.			
			0.4									
			0.6	0.60	7209/BH221/0.7-0.8/S/1 D 0.70 m			SC	Sandy CLAY: low plasticity; brown.			RESIDUAL SOIL
			0.8									
			1.0									
			1.2	1.20					Hole Terminated at 1.20 m (Target depth reached)			
			1.4									
			1.6									
			1.8									

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CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH222**
PROJECT	Detailed Site Investigation		LOGGED	CZ	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42895407	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 1.20 m depth	NORTHING	-30.24829413	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V		Not Encountered	0.2	0.10				SC	TOPSOIL: Sandy CLAY: low plasticity; brown; with roots.			FILL
			0.4		7209/BH222/0.1-0.2/S/1 D 0.10 m			SC	Sandy CLAY: low plasticity; brown.			RESIDUAL SOIL
			0.6		7209/BH222/0.6-0.7/S/1 D 0.60 m							
			0.8									
			1.0									
			1.2	1.20					Hole Terminated at 1.20 m (Target depth reached)			
			1.4									
			1.6									
			1.8									

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

MARTENS & ASSOCIATES PTY LTD
Suite 201, 20 George St. Hornsby, NSW 2077 Australia
Phone: (02) 9476 9999 Fax: (02) 9476 8767
mail@martens.com.au WEB: http://www.martens.com.au

Engineering Log - BOREHOLE

CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH223**
PROJECT	Detailed Site Investigation		LOGGED	CZ	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42888242	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 0.90 m depth	NORTHING	-30.24638783	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V		Not Encountered	0.2	*0.10*	7209/BH223/0.2-0.3/S/1 D 0.20 m			SC	TOPSOIL: Sandy CLAY: low plasticity; brown; with roots and gravels.			FILL
			0.4					SC	Sandy CLAY: low plasticity; brown.			RESIDUAL SOIL
			0.6		7209/BH223/0.7-0.8/S/1 D 0.70 m							
			0.8	*0.90*					Hole Terminated at 0.90 m (Target depth reached)			
			1.0									
			1.2									
			1.4									
			1.6									
			1.8									

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Engineering Log - BOREHOLE

CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH224**
PROJECT	Detailed Site Investigation		LOGGED	CZ	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42891821	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 1.10 m depth	NORTHING	-30.2447963	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V		Not Encountered	0.2	0.10	7209/BH224/0.1-0.2/S/1 D 0.10 m			SC	TOPSOIL: Sandy CLAY: low plasticity; brown; with roots.			FILL
			0.4					SC	Sandy CLAY: low to medium plasticity; grey mottled brown.			RESIDUAL SOIL
			0.6	0.50	7209/BH224/0.6-0.7/S/1 D 0.60 m			CL-CI	CLAY: low to medium plasticity; brown mottled red.			
			0.8									
			1.0	1.10					Hole Terminated at 1.10 m (Target depth reached)			
			1.2									
			1.4									
			1.6									
			1.8									

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Engineering Log - BOREHOLE

CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH225**
PROJECT	Detailed Site Investigation		LOGGED	CZ	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42900767	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 0.90 m depth	NORTHING	-30.2443005	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V		Not Encountered	0.2	*0.20*	7209/BH225/0.1-0.2/S/1 D 0.10 m			SC	TOPSOIL: Sandy CLAY: low plasticity; brown; with roots.			FILL
			0.4					CL-CI	CLAY: low to medium plasticity; red / dark brown.			RESIDUAL SOIL
			0.6		7209/BH225/0.6/S/1 D 0.60 m							
			0.8	*0.90*								
			1.0						Hole Terminated at 0.90 m (Target depth reached)			
			1.2									
			1.4									
			1.6									
			1.8									

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Engineering Log - BOREHOLE

CLIENT	Favelle Favco Cranes Pty Ltd		COMMENCED	08/10/2019	COMPLETED	08/10/2019	**REF BH226**
PROJECT	Detailed Site Investigation		LOGGED	CZ	CHECKED		Sheet 1 OF 1
SITE	28 Yarrunga Street, Prestons, NSW		GEOLOGY	Bringelly Shale	VEGETATION	None	PROJECT NO. P1907209
EQUIPMENT		4WD truck-mounted hydraulic drill rig	EASTING	62.42895879	RL SURFACE	m	DATUM AHD
EXCAVATION DIMENSIONS		Ø100 mm x 1.10 m depth	NORTHING	-30.24326313	ASPECT		SLOPE

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION 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
AD/V		Not Encountered	0.2		7209/BH226/0.2-0.3/S/1 D 0.20 m			SC	TOPSOIL: Sandy CLAY: low plasticity; brown; with roots.			TOPSOIL
				0.30				CL	CLAY: low plasticity; red / brown.			RESIDUAL SOIL
			0.4									
			0.6		7209/BH226/0.7-0.8/S/1 D 0.70 m							
			0.8									
			1.0	*1.10*								
			1.2						Hole Terminated at 1.10 m (Target depth reached)			
			1.4									
			1.6									
			1.8									

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Engineering Log - BOREHOLE

Attachment D **Laboratory Summary Tables**

		TRH							BTEXN						PAH																		
		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	Fluoranthrene	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)
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil																														**40**	**40**	**40**	**400**
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Silt																																	
0-1m			**250**		**NL**				**4**	**NL**	**NL**			**NL**													**NL**						
1-2m			**360**		**NL**				**4**	**NL**	**NL**			**NL**													**NL**						
2-4m			**590**		**NL**				**6**	**NL**	**NL**			**NL**													**NL**						
>4m			**NL**		**NL**				**10**	**NL**	**NL**			**NL**													**NL**						
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil		**800**		**1000**		**5000**	**10000**																										
Field_ID	**Sample Depth**																																
BH201_0.1	0.1	<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
BH201_1.0	1	<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
BH202_0.1	0.1	<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
BH202_0.5	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
BH203_0.1	0.1	<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
BH203_1.0	1	<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
BH204_0.1	0.1	<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
BH204_0.5	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
BH206_0.1	0.1	<25	<25	<50	<50	300	100	400	<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
BH207_0.2-0.3	0.25	<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
BH208_0.1- 0.3	0.2	<25	<25	<50	<50	150	<100	150	<0.2	<0.5	<1	<2	<1	<3	0.2	<0.1	<0.1	<0.1	0.1	0.09	<0.1	0.1	<0.1	0.2	<0.1	<0.1	<0.1	0.1	0.2	<0.5	<0.5	<0.5	1.1
BH209_0.1-0.3	0.2	<25	<25	<50	<50	200	120	310	<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
BH212_0-0.2	0.1	<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
BH213_0.1	0.1	<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
BH216_0.5-0.7	0.6	<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
BH218_0.2-0.3	0.25	<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	0.2	<0.1	<0.5	<0.5	<0.5	0.2
BH221_0.2-0.3	0.25	<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
BH225_0.1-0.2	0.15	<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
SS1		<25	<25	<50	<50	190	110	300	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	0.06	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	0.2
SS11		<25	<25	<50	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	1	<0.1	<0.1	<0.1	0.7	0.64	0.6	0.8	<0.1	1	<0.1	0.4	<0.1	1	1.1	0.9	1	0.9	7.3
SS2		<25	<25	<50	<50	240	170	410	<0.2	<0.5	<1	<2	<1	<3	<0.2	<0.1	<0.1	<0.1	<0.1	0.06	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	0.2
SS20		<25	<25	110	110	1600	430	2200	<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
SS22		<25	<25	<50	<50	420	250	660	<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
SS25		<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
SS27		<25	<25	110	110	10,000	4900	15,000	<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	0.1
SS28		<25	<25	60	60	9100	4300	13,000	<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	0.2
SS29		<25	<25	<50	<50	160	100	260	<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
SS3		<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	0.1
SS30		<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
SS31		<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
SS33		<25	<25	99	99	390	200	680	<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
SS35		<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
SS4		<25	<25	<50	<50	360	150	510	<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
SS6		<25	<25	<50	<50	590	360	950	<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
SS7		<25	<25	<50	<50	510	410	920	<0.2	<0.5	<1	<2	<1	<3	0.6	<0.1	<0.1	<0.1	0.2	0.4	0.6	0.2	<0.1	0.3	<0.1	0.3	<0.1	<0.1	0.4	0.6	0.6	0.5	2.9
SS9		<25	<25	<50	<50	4800	1900	6700	<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
Trip Blank		<25	<25	-	-	-	-	-	<0.2	<0.5	<1	<2	<1	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	-	-	-
Statistical Summary																																	
Number of Detects		0	0	4	4	16	14	16	0	0	0	0	0	0	3	0	0	0	3	5	5	3	0	3	0	2	0	4	5	2	2	2	9
Number of Guideline Exceedances(Detects Only)		0	0	0	36	2	0	0	0	37	37	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	37	0	0	0	0	0	0

	Metals								PCBs							
	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	4	0.4	1	1	1	0.1	1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil	**3,000**	**900**		**240000**	**1500**	**730**	**6000**	**400000**								**7**
Field_ID	**Sample_Depth_Avg**															
BH201_0.1	0.1	4	<0.4	9	20	10	<0.1	12	40	-	-	-	-	-	-	-	-
BH201_1.0	1	4	<0.4	11	43	14	<0.1	14	77	-	-	-	-	-	-	-	-
BH202_0.1	0.1	5	<0.4	14	47	12	<0.1	31	96	-	-	-	-	-	-	-	-
BH202_0.5	0.5	<4	<0.4	9	29	13	<0.1	36	55	-	-	-	-	-	-	-	-
BH203_0.1	0.1	10	<0.4	22	25	32	<0.1	12	83	-	-	-	-	-	-	-	-
BH203_1.0	1	<4	<0.4	7	24	10	<0.1	20	33	-	-	-	-	-	-	-	-
BH204_0.1	0.1	7	<0.4	18	24	39	<0.1	11	78	-	-	-	-	-	-	-	-
BH204_0.5	0.5	9	<0.4	16	25	14	<0.1	9	42	-	-	-	-	-	-	-	-
BH206_0.1	0.1	7	<0.4	18	37	41	<0.1	7	63	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH207_0.2-0.3	0.25	6	<0.4	19	30	29	<0.1	10	67	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH208_0.1- 0.3	0.2	6	<0.4	27	54	39	<0.1	11	250	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH209_0.1-0.3	0.2	<4	2	96	720	530	<0.1	29	5400	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH212_0.5-0.7	0.6	<4	<0.4	7	19	7	<0.1	3	25	-	-	-	-	-	-	-	-
BH212_0-0.2	0.1	7	0.8	36	150	73	<0.1	24	450	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH213_0.1	0.1	6	<0.4	23	26	37	<0.1	12	78	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH216_0.5-0.7	0.6	<4	<0.4	5	15	5	<0.1	3	20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH218_0.2-0.3	0.25	<4	<0.4	10	73	40	<0.1	18	190	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH221_0.2-0.3	0.25	180	2	94	2300	980	<0.1	25	16000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH221_0.7-0.8	0.75	10	<0.4	21	19	21	<0.1	6	57	-	-	-	-	-	-	-	-
BH223_0.2-0.3	0.25	6	<0.4	22	130	53	<0.1	18	320	-	-	-	-	-	-	-	-
BH225_0.1-0.2	0.15	6	0.4	13	1600	33	<0.1	8	360	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH225_0.6-0.7	0.65	9	<0.4	18	14	19	<0.1	5	44	-	-	-	-	-	-	-	-
BH226_0.2-0.3	0.25	7	<0.4	19	16	20	<0.1	8	30	-	-	-	-	-	-	-	-
Dup1		5	<0.4	19	13	11	<0.1	6	40	-	-	-	-	-	-	-	-
Dup2		<4	<0.4	4	11	4	<0.1	3	18	-	-	-	-	-	-	-	-
Dup3		<4	<0.4	49	46	26	<0.1	39	170	-	-	-	-	-	-	-	-
Dup4		5	2	250	120	81	<0.1	62	9000	-	-	-	-	-	-	-	-
Dup5		<4	<0.4	53	150	87	<0.1	30	910	-	-	-	-	-	-	-	-
SS1		<4	<0.4	42	94	37	<0.1	20	170	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SS11		<4	<0.4	49	35	17	<0.1	37	110	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SS12		5	2	270	120	87	<0.1	55	8600	-	-	-	-	-	-	-	-
SS13		<4	4	250	76	350	<0.1	30	4100	-	-	-	-	-	-	-	-
SS14		<4	3	210	67	220	<0.1	28	4300	-	-	-	-	-	-	-	-
SS15		10	8.6	190	480	690	<0.1	52	64000	-	-	-	-	-	-	-	-
SS16		17	<0.4	51	880	420	<0.1	20	2900	-	-	-	-	-	-	-	-
SS17		13	0.9	77	2100	780	<0.1	30	5300	-	-	-	-	-	-	-	-
SS18		10	<0.4	23	330	170	<0.1	9	1100	-	-	-	-	-	-	-	-
SS19		11	<0.4	77	2500	830	<0.1	34	5500	-	-	-	-	-	-	-	-
SS2		<4	<0.4	27	110	48	<0.1	21	260	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SS20		8	1	130	850	370	<0.1	56	6000	-	-	-	-	-	-	-	-
SS21		9	1	93	1800	690	<0.1	43	5700	-	-	-	-	-	-	-	-
SS22		11	1	110	1600	620	<0.1	47	5500	-	-	-	-	-	-	-	-
SS23		<4	<0.4	48	130	86	<0.1	27	900	-	-	-	-	-	-	-	-
SS24		<4	0.9	150	180	200	<0.1	35	5700	-	-	-	-	-	-	-	-
SS25		7	<0.4	20	71	43	<0.1	5	190	-	-	-	-	-	-	-	-
SS26		6	<0.4	83	700	320	<0.1	67	1900	-	-	-	-	-	-	-	-
SS27		8	0.5	41	220	98	<0.1	50	590	-	-	-	-	-	-	-	-
SS28		<4	0.9	32	130	60	<0.1	48	480	-	-	-	-	-	-	-	-
SS29		<4	1	27	200	82	<0.1	62	490	-	-	-	-	-	-	-	-
SS3		<4	<0.4	89	50	31	<0.1	71	130	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SS30		<4	0.6	15	150	15	<0.1	85	140	-	-	-	-	-	-	-	-
SS31		13	0.8	40	220	130	<0.1	25	790	-	-	-	-	-	-	-	-
SS33		5	<0.4	51	160	66	<0.1	42	390	-	-	-	-	-	-	-	-
SS35		10	<0.4	44	30	59	<0.1	23	97	-	-	-	-	-	-	-	-
SS4		<4	<0.4	36	140	61	<0.1	28	420	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SS6		<4	<0.4	16	75	19	<0.1	25	51	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SS7		<4	<0.4	58	120	25	<0.1	14	140	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SS9		7	<0.4	36	410	170	<0.1	86	1500	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Statistical Summary																	
Number of Detects		35	19	58	58	58	0	58	58	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		Organochlorine Pesticides																					Organophosphorous Pesticides											
		Hexachlorobenzene	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	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	Azinophos methyl	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenitrothion	Malathion	Ronnel	Parathion
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil		**80**											**3,600**					**100**			**50**		**2,500**			**2,000**									
Field_ID	**Sample_Depth_Avg**																																		
BH206_0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH207_0.2-0.3	0.25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH208_0.1- 0.3	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
BH209_0.1-0.3	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
BH212_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	<0.1
BH213_0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH216_0.5-0.7	0.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH218_0.2-0.3	0.25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH221_0.2-0.3	0.25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH223_0.2-0.3	0.25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH225_0.1-0.2	0.15	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH226_0.2-0.3	0.25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SS1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SS11		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SS2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SS3		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SS4		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SS6		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SS7		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SS9		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
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
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

Attachment E **Data Validation Report**

DATA VALIDATION REPORT: 28 Yarrunga Street, Prestons, NSW

1. Sample Handling

	Yes	No (Comments below)
a. Were sample holding times met?	✓	
b. Were samples in proper custody between the field and reaching the laboratory?	✓	
c. Were the samples properly and adequately preserved?	✓	
d. Were the samples received by the laboratory in good condition?	✓	

COMMENTS

Sample handling is:

✓ **Satisfactory**

Partially Satisfactory

Unsatisfactory

2. Precision / Accuracy Statement

	Yes	No (Comments below)
a. Was a NATA registered laboratory used?	✓	
b. Did the laboratory perform the requested tests?	✓	
c. Were laboratory methods adopted NATA endorsed?	✓	
d. Were appropriate test procedures followed?	✓	
e. Were reporting limits satisfactory?	✓	
f. Was the NATA Seal on the reports?	✓	
g. Were reports signed by an authorised person?	✓	

COMMENTS

Precision / Accuracy of the Laboratory Report:	✓	**Satisfactory**
		Partially Satisfactory
		Unsatisfactory

3. Field Quality Assurance / Quality Control (QA/QC)

	Media	Number
a. Number of Primary Samples analysed *(does not include duplicates)*	Soil:	46
	Water:	-
	Material	-
b. Number of days of sampling	1	

c. Number and Type of QA/QC Samples analysed	Soil	Water
Intra-Laboratory Field Duplicates	5	
Inter-Laboratory Field triplicates	-	
Trip Blanks	1	
Field Rinsate	-	
Other (Field Blanks, Spikes, etc.)	-	

Comments

DATA VALIDATION REPORT: 28 Yarrunga Street, Prestons, NSW

Field Duplicates

	Yes	No (Comments below)
Adequate Numbers of intra-laboratory field duplicates analysed?	✓	
Adequate Numbers of inter-laboratory field duplicates analysed?	✓	-
Were field duplicate RPDs within Control Limits?		
i. Organics	N/A	
ii. Metals / Inorganics		✓
iii. Nutrients	N/A	

COMMENTS

The RPD for copper, lead and zinc was exceeded in duplicate sample DUP1 (parent sample BH207/0.2-0.3), and zinc for DUP3 (parent sample SS11). Samples exceeding RPDs were collected from fill material are likely attributed to the heterogeneity of the fill sampled. All exceeding contaminants are below SAC and do not affect DSI findings.

DATA VALIDATION REPORT: 28 Yarrunga Street, Prestons, NSW

Summary of Quality Assurance / Quality Control (QA/QC)

QA/QC Type	Satisfactory	Partially Satisfactory	Unsatisfactory
Sample handling	✓		
Precision / Accuracy of the Laboratory Report	✓		
Field QA / QC	✓		
Laboratory Internal QA / QC	✓		

Data Usability

1. Data directly usable ✓
2. Data usable with the following corrections/modifications *(see comment below)*
3. Data not usable.

COMMENTS

Field Duplicates (SOIL)	SDG	ENVIROLAB 2019-11-07T00:00:00	ENVIROLAB 2019-11-07T00:00:00		ENVIROLAB 2019-11-07T00:00:00	ENVIROLAB 2019-11-07T00:00:00	
Filter: SDG in('ENVIR	Field ID	6630/SS01	6630/DUP01	RPD	6630/SS10	6630/DUP02	RPD
	Sampled Date/Time	7/11/2019	7/11/2019		7/11/2019	7/11/2019	
Method_T	ChemNam	Units	EQL						
Moisture	Moisture	%	0.1	9.7	8.7	11	16.0	16.0	0
Acid Extrac	Arsenic	mg/kg	4	11.0	10.0	10	10.0	8.0	22
	Cadmium	mg/kg	0.4	<0.4	<0.4	0	0.4	<0.4	0
	Chromium	mg/kg	1	25.0	24.0	4	22.0	17.0	26
	Copper	mg/kg	1	23.0	25.0	8	110.0	94.0	16
	Lead	mg/kg	1	84.0	63.0	29	**200.0**	**140.0**	**35**
	Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	Nickel	mg/kg	1	12.0	17.0	34	34.0	35.0	3
	Zinc	mg/kg	1	120.0	98.0	20	390.0	350.0	11

*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 F **Laboratory Certificates**

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consulting engineers since 1989

SOIL ANALYSIS CHAIN OF CUSTODY FORM

Additional Testing													
Name	P1907209 - 28 Yarrunga Street, Prestons												
Martens Contact Officer	Charles Zhao					**Contact Email**	czhao@martens.com.au						
Sampling and Shipping	**Sample Date**	08 October 2019		**Dispatch Date**	09 October 2019		**Turnaround Time**		Standard				
	Our Reference	P1907209COC01V01				**Shipping Method (X)**	**Hand**	**X**	**Post**		**Courier**		
	On Ice (X)	**X**	**No Ice (X)**		**Other (X)**								
Laboratory													
Name	EnviroLab												
Sample Delivery Address	12 Ashley Street, Chatswood												
Delivery Contact	**Name**	Aileen Hie			**Phone**	9910 6200	**Fax**		**Email**	samplereceipt@envirolab.com.au			
Please Send Report By (X)	**Post**		**Fax**		**Email**	**X**	**Reporting Email Address**	czhao@martens.com.au rmehaffey@martens.com.au gtaylor@martens.com.au rkightley@martens.com.au					

	Sample ID	Combo 3	Combo 6a	8 Heavy Metals	OCP / OPP	Asbestos in soil	BTEX	TRH	HOLD
1	BH201_0.1	X							
2	BH201_0.5								X
3	BH201_1.0	X							
4	BH201_1.4 (1.5)								X
5	BH202_0.1	X							
6	BH202_0.5	X							
7	BH202_1.0								X
8	BH203_0.1	X							
9	BH203_0.4								X
10	BH203_1.0	X							
11	BH203_1.5								X
12	BH204_0.1	X							
13	BH204_0.5	X							

ENVIROLAB

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

Job No: 227977

Date Received: 09/10/19
Time Received: 1720
Received by: SB
Temp: ~~Cool~~/Ambient
Cooling: ~~Ice~~/Icepack
Security: ~~Intact~~/Broken/None

Head Office
Suite 201, Level 2, 20 George Street
Hornsby NSW 2077, Australia
Ph 02 9476 9999 **Fax** 02 9476 8767

> mail@martens.com.au
> www.martens.com.au
MARTENS & ASSOCIATES P/L
ABN 85 070 240 890 ACN 070 240 890

227977

SOIL ANALYSIS CHAIN OF CUSTODY

Sample ID	Combo 3	Combo 6a	8 Heavy Metals	OCP / OPP	Asbestos in soil	BTEX	TRH	HOLD
14 BH205_0.0-0.1								X
15 BH205_0.5-0.6								X
16 BH206_0.1		X						
17 BH206_0.5								X
18 BH207_0.2-0.3		X						
19 BH207_0.7- 0.8								X
20 BH208_0.1- 0.3		X						
21 BH208_0.7-0.9								X
22 BH209_0.1-0.3								X
NR BH209_0.5-0.7		X						
23 BH210_0-0.2								X
24 BH210_0.5-0.7								X
25 BH211_0.2-0.3								X
26 BH211_0.4-0.5								X
27 BH211_0.6-0.7								X
28 BH212_0-0.2		X						
29 BH212_0.5-0.7								X
30 BH213_0.1		X						
31 BH213_0.5								X
32 BH214_0.1								X
33 BH214_0.5								X
34 BH215_0-0.2								X
35 BH215_0.5-0.6								X
36 BH216_0-0.2								X
37 BH216_0.5-0.7		X						
38 BH217_0.1-0.2								X
39 BH217_0.5-0.6								X
40 BH218_0.1-0.3 0.2-0.3		X						
41 BH218_0.4-0.6								X
42 BH219_0.1-0.2								X
43 BH219_0.6-0.7								X
44 BH220_0.1-0.2								X
45 BH220_0.7-0.8								X
46 BH221_0.2-0.3		X						
47 BH221_0.7-0.8								X
48 BH222_0.1-0.2								X
49 BH222_0.6-0.7								X
50 BH223_0.2-0.3			X	X	X			

227977

SOIL ANALYSIS CHAIN OF CUSTODY

	Sample ID	Combo 3	Combo 6a	8 Heavy Metals	OCP / OPP	Asbestos in soil	BTEX	TRH	HOLD
51	BH223_0.7-0.8								X
52	BH224_0.1 -0.2								X
53	BH224_0.6-0.7								X
54	BH225_0.1-0.2		X						
55	BH225_0.6-0.7								X
56	BH226_0.2-0.3			X	X	X			
57	BH226_0.7-0.8								X
58	SS1		X						
59	SS2		X						
60	SS3		X						
61	SS4		X						
62	SS5								X
63	SS6		X						
64	SS7		X						
65	SS8								X
66	SS9		X						
67	SS10								X
68	SS11		X						
69	SS12			X					
70	SS13			X					
71	SS14								X
72	SS15			X					
73	SS16								X
74	SS17			X					
75	SS18								X
76	SS19								X
77	SS20	X							
78	SS21			X					
79	SS22	X							
80	SS23			X					
81	SS24			X					
82	SS25	X							
83	SS26			X					
84	SS27	X							
85	SS28	X							
86	SS29	X							
87	SS30	X							
88	SS31	X							

227977

SOIL ANALYSIS CHAIN OF CUSTODY

	Sample ID	Combo 3	Combo 6a	8 Heavy Metals	OCP / OPP	Asbestos In soil	BTEX	TRH	HOLD
89	SS32								X
90	SS33	X							
91	SS34								X
92	SS35	X							
93	Dup1			X					
94	Dup2			X					
95	Dup3			X					
96	Dup4			X					
97	Dup5			X					
98	Trip Spike						X		
99	Trip Blank							X	

100 BH219 0.5-0.7 extra sample rec'd.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 227977

Client Details

Client	Martens & Associates Pty Ltd
Attention	Charles Zhao
Address	Suite 201, 20 George St, Hornsby, NSW, 2077

Sample Details

Your Reference	**P1907209 - 28 Yarrunga Street, Prestons**
Number of Samples	100 Soil
Date samples received	09/10/2019
Date completed instructions received	09/10/2019

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	16/10/2019
Date of Issue	16/10/2019

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Asbestos Approved By
Analysed by Asbestos Approved Identifier: Aida Marner
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Dragana Tomas, Senior Chemist
Jaimie Loa-Kum-Cheung, Metals Supervisor
Josh Williams, Chemist
Lucy Zhu, Senior Asbestos Analyst
Steven Luong, Organics Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		227977-1	227977-3	227977-5	227977-6	227977-8
Your Reference	UNITS	BH201_0.1	BH201_1.0	BH202_0.1	BH202_0.5	BH203_0.1
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
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	%	95	96	92	93	90

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		227977-10	227977-12	227977-13	227977-16	227977-18
Your Reference	UNITS	BH203_1.0	BH204_0.1	BH204_0.5	BH206_0.1	BH207_0.2-0.3
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	86	86	84	92	94

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		227977-20	227977-22	227977-28	227977-30	227977-37
Your Reference	UNITS	BH208_0.1- 0.3	BH209_0.1-0.3	BH212_0-0.2	BH213_0.1	BH216_0.5-0.7
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
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	%	96	87	89	93	93

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		227977-40	227977-46	227977-54	227977-58	227977-59
Your Reference	UNITS	BH218_0.2-0.3	BH221_0.2-0.3	BH225_0.1-0.2	SS1	SS2
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
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	%	98	92	98	97	95

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		227977-60	227977-61	227977-63	227977-64	227977-66
Your Reference	UNITS	SS3	SS4	SS6	SS7	SS9
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	89	84	95	80	91

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		227977-68	227977-77	227977-79	227977-82	227977-84
Your Reference	UNITS	SS11	SS20	SS22	SS25	SS27
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	89	86	95	91	85

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		227977-85	227977-86	227977-87	227977-88	227977-90
Your Reference	UNITS	SS28	SS29	SS30	SS31	SS33
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	12/10/2019	12/10/2019	12/10/2019	12/10/2019	12/10/2019
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	%	96	84	94	90	93

vTRH(C6-C10)/BTEXN in Soil				
Our Reference		227977-92	227977-98	227977-99
Your Reference	UNITS	SS35	Trip Spike	Trip Blank
Date Sampled		08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	12/10/2019	12/10/2019	12/10/2019
TRH C_6 - C_9	mg/kg	<25	[NA]	<25
TRH C_6 - C_{10}	mg/kg	<25	[NA]	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	[NA]	<25
Benzene	mg/kg	<0.2	90%	<0.2
Toluene	mg/kg	<0.5	91%	<0.5
Ethylbenzene	mg/kg	<1	88%	<1
m+p-xylene	mg/kg	<2	87%	<2
o-Xylene	mg/kg	<1	85%	<1
naphthalene	mg/kg	<1	[NA]	<1
Total +ve Xylenes	mg/kg	<3	[NA]	<3
Surrogate aaa-Trifluorotoluene	%	91	85	96

svTRH (C10-C40) in Soil						
Our Reference		227977-1	227977-3	227977-5	227977-6	227977-8
Your Reference	UNITS	BH201_0.1	BH201_1.0	BH202_0.1	BH202_0.5	BH203_0.1
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
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	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	88	87	87	85	85

svTRH (C10-C40) in Soil						
Our Reference		227977-10	227977-12	227977-13	227977-16	227977-18
Your Reference	UNITS	BH203_1.0	BH204_0.1	BH204_0.5	BH206_0.1	BH207_0.2-0.3
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	160	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	200	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	300	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	400	<50
Surrogate o-Terphenyl	%	85	99	101	106	101

svTRH (C10-C40) in Soil						
Our Reference		227977-20	227977-22	227977-28	227977-30	227977-37
Your Reference	UNITS	BH208_0.1- 0.3	BH209_0.1-0.3	BH212_0-0.2	BH213_0.1	BH216_0.5-0.7
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	120	160	<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	200	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	120	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	150	310	<50	<50	<50
Surrogate o-Terphenyl	%	103	89	85	101	99

svTRH (C10-C40) in Soil						
Our Reference		227977-40	227977-46	227977-54	227977-58	227977-59
Your Reference	UNITS	BH218_0.2-0.3	BH221_0.2-0.3	BH225_0.1-0.2	SS1	SS2
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
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	210	300
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	190	240
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	110	170
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	300	410
Surrogate o-Terphenyl	%	102	98	99	75	74

svTRH (C10-C40) in Soil						
Our Reference		227977-60	227977-61	227977-63	227977-64	227977-66
Your Reference	UNITS	SS3	SS4	SS6	SS7	SS9
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	14/10/2019	15/10/2019	15/10/2019	15/10/2019	15/10/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	150	220	160	2,300
TRH C_{29} - C_{36}	mg/kg	<100	340	670	680	3,400
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	360	590	510	4,800
TRH >C_{34} -C_{40}	mg/kg	<100	150	360	410	1,900
Total +ve TRH (>C10-C40)	mg/kg	<50	510	950	920	6,700
Surrogate o-Terphenyl	%	103	74	76	89	110

svTRH (C10-C40) in Soil						
Our Reference		227977-68	227977-77	227977-79	227977-82	227977-84
Your Reference	UNITS	SS11	SS20	SS22	SS25	SS27
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	15/10/2019	15/10/2019	15/10/2019	15/10/2019	15/10/2019
TRH C_{10} - C_{14}	mg/kg	<50	120	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	1,200	200	<100	5,100
TRH C_{29} - C_{36}	mg/kg	<100	620	330	<100	7,700
TRH >C_{10} -C_{16}	mg/kg	<50	110	<50	<50	110
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	110	<50	<50	110
TRH >C_{16} -C_{34}	mg/kg	<100	1,600	420	<100	10,000
TRH >C_{34} -C_{40}	mg/kg	<100	430	250	<100	4,900
Total +ve TRH (>C10-C40)	mg/kg	<50	2,200	660	<50	15,000
Surrogate o-Terphenyl	%	84	128	88	85	#

svTRH (C10-C40) in Soil						
Our Reference		227977-85	227977-86	227977-87	227977-88	227977-90
Your Reference	UNITS	SS28	SS29	SS30	SS31	SS33
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	15/10/2019	15/10/2019	15/10/2019	15/10/2019	15/10/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	82
TRH C_{15} - C_{28}	mg/kg	3,800	<100	<100	<100	220
TRH C_{29} - C_{36}	mg/kg	7,400	150	<100	100	280
TRH >C_{10} -C_{16}	mg/kg	60	<50	<50	<50	99
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	60	<50	<50	<50	99
TRH >C_{16} -C_{34}	mg/kg	9,100	160	<100	100	390
TRH >C_{34} -C_{40}	mg/kg	4,300	100	<100	<100	200
Total +ve TRH (>C10-C40)	mg/kg	13,000	260	<50	100	680
Surrogate o-Terphenyl	%	#	71	94	73	85

svTRH (C10-C40) in Soil		
Our Reference		227977-92
Your Reference	UNITS	SS35
Date Sampled		08/10/2019
Type of sample		Soil
Date extracted	-	11/10/2019
Date analysed	-	15/10/2019
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	%	80

PAHs in Soil						
Our Reference		227977-1	227977-3	227977-5	227977-6	227977-8
Your Reference	UNITS	BH201_0.1	BH201_1.0	BH202_0.1	BH202_0.5	BH203_0.1
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
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	%	99	94	106	99	101

PAHs in Soil						
Our Reference		227977-10	227977-12	227977-13	227977-16	227977-18
Your Reference	UNITS	BH203_1.0	BH204_0.1	BH204_0.5	BH206_0.1	BH207_0.2-0.3
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
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	%	105	103	101	104	100

PAHs in Soil						
Our Reference		227977-20	227977-22	227977-28	227977-30	227977-37
Your Reference	UNITS	BH208_0.1- 0.3	BH209_0.1-0.3	BH212_0-0.2	BH213_0.1	BH216_0.5-0.7
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
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	0.2	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.09	<0.05	<0.05	<0.05	<0.05
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	1.1	<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	%	105	103	101	101	101

PAHs in Soil						
Our Reference		227977-40	227977-46	227977-54	227977-58	227977-59
Your Reference	UNITS	BH218_0.2-0.3	BH221_0.2-0.3	BH225_0.1-0.2	SS1	SS2
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<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	0.06	0.06
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	0.1	0.1
Total +ve PAH's	mg/kg	0.2	<0.05	<0.05	0.2	0.2
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	100	103	103	103	102

PAHs in Soil						
Our Reference		227977-60	227977-61	227977-63	227977-64	227977-66
Your Reference	UNITS	SS3	SS4	SS6	SS7	SS9
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
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	0.3	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	0.4	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	0.6	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	0.4	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	0.3	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	0.6	<0.1
Total +ve PAH's	mg/kg	0.1	<0.05	<0.05	2.9	<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	0.6	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	0.6	<0.5
Surrogate p-Terphenyl-d14	%	104	105	107	106	106

PAHs in Soil						
Our Reference		227977-68	227977-77	227977-79	227977-82	227977-84
Your Reference	UNITS	SS11	SS20	SS22	SS25	SS27
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
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	1.0	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	1.1	<0.1	<0.1	<0.1	0.1
Benzo(a)anthracene	mg/kg	0.7	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.8	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	1	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.64	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.4	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.6	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	7.3	<0.05	<0.05	<0.05	0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	0.9	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	0.9	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	1	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	108	113	104	106	102

PAHs in Soil						
Our Reference		227977-85	227977-86	227977-87	227977-88	227977-90
Your Reference	UNITS	SS28	SS29	SS30	SS31	SS33
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
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	0.2	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	103	103	106	104	106

PAHs in Soil		
Our Reference		227977-92
Your Reference	UNITS	SS35
Date Sampled		08/10/2019
Type of sample		Soil
Date extracted	-	11/10/2019
Date analysed	-	11/10/2019
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	%	105

Organochlorine Pesticides in soil						
Our Reference		227977-16	227977-18	227977-20	227977-22	227977-28
Your Reference	UNITS	BH206_0.1	BH207_0.2-0.3	BH208_0.1- 0.3	BH209_0.1-0.3	BH212_0-0.2
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	98	101	96	100	99

Organochlorine Pesticides in soil						
Our Reference		227977-30	227977-37	227977-40	227977-46	227977-50
Your Reference	UNITS	BH213_0.1	BH216_0.5-0.7	BH218_0.2-0.3	BH221_0.2-0.3	BH223_0.2-0.3
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	92	102	101	98	97

Organochlorine Pesticides in soil						
Our Reference		227977-54	227977-56	227977-58	227977-59	227977-60
Your Reference	UNITS	BH225_0.1-0.2	BH226_0.2-0.3	SS1	SS2	SS3
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	11/10/2019	11/10/2019	14/10/2019	14/10/2019	11/10/2019
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	100	97	96	96	102

Organochlorine Pesticides in soil						
Our Reference		227977-61	227977-63	227977-64	227977-66	227977-68
Your Reference	UNITS	SS4	SS6	SS7	SS9	SS11
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	11/10/2019	11/10/2019
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	93	91	89	100	100

Organophosphorus Pesticides						
Our Reference		227977-16	227977-18	227977-20	227977-22	227977-28
Your Reference	UNITS	BH206_0.1	BH207_0.2-0.3	BH208_0.1- 0.3	BH209_0.1-0.3	BH212_0-0.2
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	98	101	96	100	99

Organophosphorus Pesticides						
Our Reference		227977-30	227977-37	227977-40	227977-46	227977-50
Your Reference	UNITS	BH213_0.1	BH216_0.5-0.7	BH218_0.2-0.3	BH221_0.2-0.3	BH223_0.2-0.3
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	92	102	101	98	97

Organophosphorus Pesticides						
Our Reference		227977-54	227977-56	227977-58	227977-59	227977-60
Your Reference	UNITS	BH225_0.1-0.2	BH226_0.2-0.3	SS1	SS2	SS3
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	11/10/2019	11/10/2019	14/10/2019	14/10/2019	11/10/2019
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	100	97	96	96	102

Organophosphorus Pesticides						
Our Reference		227977-61	227977-63	227977-64	227977-66	227977-68
Your Reference	UNITS	SS4	SS6	SS7	SS9	SS11
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	11/10/2019	11/10/2019
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	93	91	89	100	100

PCBs in Soil						
Our Reference		227977-16	227977-18	227977-20	227977-22	227977-28
Your Reference	UNITS	BH206_0.1	BH207_0.2-0.3	BH208_0.1- 0.3	BH209_0.1-0.3	BH212_0-0.2
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
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	%	98	101	96	100	99

PCBs in Soil						
Our Reference		227977-30	227977-37	227977-40	227977-46	227977-54
Your Reference	UNITS	BH213_0.1	BH216_0.5-0.7	BH218_0.2-0.3	BH221_0.2-0.3	BH225_0.1-0.2
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
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	%	92	102	101	98	100

PCBs in Soil						
Our Reference		227977-58	227977-59	227977-60	227977-61	227977-63
Your Reference	UNITS	SS1	SS2	SS3	SS4	SS6
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	14/10/2019	14/10/2019	11/10/2019	14/10/2019	14/10/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	96	96	102	93	91

PCBs in Soil				
Our Reference		227977-64	227977-66	227977-68
Your Reference	UNITS	SS7	SS9	SS11
Date Sampled		08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil
Date extracted	-	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	14/10/2019	11/10/2019	11/10/2019
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	89	100	100

Acid Extractable metals in soil						
Our Reference		227977-1	227977-3	227977-5	227977-6	227977-8
Your Reference	UNITS	BH201_0.1	BH201_1.0	BH202_0.1	BH202_0.5	BH203_0.1
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Arsenic	mg/kg	4	4	5	<4	10
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	9	11	14	9	22
Copper	mg/kg	20	43	47	29	25
Lead	mg/kg	10	14	12	13	32
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	12	14	31	36	12
Zinc	mg/kg	40	77	96	55	83

Acid Extractable metals in soil						
Our Reference		227977-10	227977-12	227977-13	227977-16	227977-18
Your Reference	UNITS	BH203_1.0	BH204_0.1	BH204_0.5	BH206_0.1	BH207_0.2-0.3
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Arsenic	mg/kg	<4	7	9	7	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	18	16	18	19
Copper	mg/kg	24	24	25	37	30
Lead	mg/kg	10	39	14	41	29
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	20	11	9	7	10
Zinc	mg/kg	33	78	42	63	67

Acid Extractable metals in soil						
Our Reference		227977-20	227977-22	227977-28	227977-30	227977-37
Your Reference	UNITS	BH208_0.1- 0.3	BH209_0.1-0.3	BH212_0-0.2	BH213_0.1	BH216_0.5-0.7
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Arsenic	mg/kg	6	<4	7	6	<4
Cadmium	mg/kg	<0.4	2	0.8	<0.4	<0.4
Chromium	mg/kg	27	96	36	23	5
Copper	mg/kg	54	720	150	26	15
Lead	mg/kg	39	530	73	37	5
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	11	29	24	12	3
Zinc	mg/kg	250	5,400	450	78	20

Acid Extractable metals in soil						
Our Reference		227977-40	227977-46	227977-50	227977-54	227977-56
Your Reference	UNITS	BH218_0.2-0.3	BH221_0.2-0.3	BH223_0.2-0.3	BH225_0.1-0.2	BH226_0.2-0.3
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Arsenic	mg/kg	<4	180	6	6	7
Cadmium	mg/kg	<0.4	2	<0.4	0.4	<0.4
Chromium	mg/kg	10	94	22	13	19
Copper	mg/kg	73	2,300	130	1,600	16
Lead	mg/kg	40	980	53	33	20
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	18	25	18	8	8
Zinc	mg/kg	190	16,000	320	360	30

Acid Extractable metals in soil						
Our Reference		227977-58	227977-59	227977-60	227977-61	227977-63
Your Reference	UNITS	SS1	SS2	SS3	SS4	SS6
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	42	27	89	36	16
Copper	mg/kg	94	110	50	140	75
Lead	mg/kg	37	48	31	61	19
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	20	21	71	28	25
Zinc	mg/kg	170	260	130	420	51

Acid Extractable metals in soil						
Our Reference		227977-64	227977-66	227977-68	227977-69	227977-70
Your Reference	UNITS	SS7	SS9	SS11	SS12	SS13
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Arsenic	mg/kg	<4	7	<4	5	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	2	4
Chromium	mg/kg	58	36	49	270	250
Copper	mg/kg	120	410	35	120	76
Lead	mg/kg	25	170	17	87	350
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	14	86	37	55	30
Zinc	mg/kg	140	1,500	110	8,600	4,100

Acid Extractable metals in soil						
Our Reference		227977-72	227977-74	227977-77	227977-78	227977-79
Your Reference	UNITS	SS15	SS17	SS20	SS21	SS22
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Arsenic	mg/kg	10	13	8	9	11
Cadmium	mg/kg	8.6	0.9	1	1	1
Chromium	mg/kg	190	77	130	93	110
Copper	mg/kg	480	2,100	850	1,800	1,600
Lead	mg/kg	690	780	370	690	620
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	52	30	56	43	47
Zinc	mg/kg	64,000	5,300	6,000	5,700	5,500

Acid Extractable metals in soil						
Our Reference		227977-80	227977-81	227977-82	227977-83	227977-84
Your Reference	UNITS	SS23	SS24	SS25	SS26	SS27
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Arsenic	mg/kg	<4	<4	7	6	8
Cadmium	mg/kg	<0.4	0.9	<0.4	<0.4	0.5
Chromium	mg/kg	48	150	20	83	41
Copper	mg/kg	130	180	71	700	220
Lead	mg/kg	86	200	43	320	98
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	27	35	5	67	50
Zinc	mg/kg	900	5,700	190	1,900	590

Acid Extractable metals in soil						
Our Reference		227977-85	227977-86	227977-87	227977-88	227977-90
Your Reference	UNITS	SS28	SS29	SS30	SS31	SS33
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Arsenic	mg/kg	<4	<4	<4	13	5
Cadmium	mg/kg	0.9	1	0.6	0.8	<0.4
Chromium	mg/kg	32	27	15	40	51
Copper	mg/kg	130	200	150	220	160
Lead	mg/kg	60	82	15	130	66
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	48	62	85	25	42
Zinc	mg/kg	480	490	140	790	390

Acid Extractable metals in soil						
Our Reference		227977-92	227977-93	227977-94	227977-95	227977-96
Your Reference	UNITS	SS35	Dup1	Dup2	Dup3	Dup4
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Arsenic	mg/kg	10	5	<4	<4	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	2
Chromium	mg/kg	44	19	4	49	250
Copper	mg/kg	30	13	11	46	120
Lead	mg/kg	59	11	4	26	81
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	23	6	3	39	62
Zinc	mg/kg	97	40	18	170	9,000

Acid Extractable metals in soil			
Our Reference		227977-97	227977-101
Your Reference	UNITS	Dup5	BH212_0-0.2 - [TRIPLICATE]
Date Sampled		08/10/2019	08/10/2019
Type of sample		Soil	Soil
Date prepared	-	14/10/2019	14/10/2019
Date analysed	-	14/10/2019	14/10/2019
Arsenic	mg/kg	<4	6
Cadmium	mg/kg	<0.4	0.8
Chromium	mg/kg	53	49
Copper	mg/kg	150	280
Lead	mg/kg	87	150
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	30	32
Zinc	mg/kg	910	990

Moisture						
Our Reference		227977-1	227977-3	227977-5	227977-6	227977-8
Your Reference	UNITS	BH201_0.1	BH201_1.0	BH202_0.1	BH202_0.5	BH203_0.1
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Moisture	%	12	9.7	10	10	10

Moisture						
Our Reference		227977-10	227977-12	227977-13	227977-16	227977-18
Your Reference	UNITS	BH203_1.0	BH204_0.1	BH204_0.5	BH206_0.1	BH207_0.2-0.3
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Moisture	%	9.8	8.0	14	9.1	13

Moisture						
Our Reference		227977-20	227977-22	227977-28	227977-30	227977-37
Your Reference	UNITS	BH208_0.1- 0.3	BH209_0.1-0.3	BH212_0-0.2	BH213_0.1	BH216_0.5-0.7
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Moisture	%	18	5.7	11	14	15

Moisture						
Our Reference		227977-40	227977-46	227977-50	227977-54	227977-56
Your Reference	UNITS	BH218_0.2-0.3	BH221_0.2-0.3	BH223_0.2-0.3	BH225_0.1-0.2	BH226_0.2-0.3
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Moisture	%	3.1	2.5	14	16	8.6

Moisture						
Our Reference		227977-58	227977-59	227977-60	227977-61	227977-63
Your Reference	UNITS	SS1	SS2	SS3	SS4	SS6
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Moisture	%	2.6	2.6	3.9	1.1	1.6

Moisture						
Our Reference		227977-64	227977-66	227977-68	227977-69	227977-70
Your Reference	UNITS	SS7	SS9	SS11	SS12	SS13
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Moisture	%	1.8	1	4.6	3.7	15

Moisture						
Our Reference		227977-72	227977-74	227977-77	227977-78	227977-79
Your Reference	UNITS	SS15	SS17	SS20	SS21	SS22
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Moisture	%	11	4.6	6.3	3.2	4.0

Moisture						
Our Reference		227977-80	227977-81	227977-82	227977-83	227977-84
Your Reference	UNITS	SS23	SS24	SS25	SS26	SS27
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Moisture	%	2.0	1.4	7.2	2.8	1.9

Moisture						
Our Reference		227977-85	227977-86	227977-87	227977-88	227977-90
Your Reference	UNITS	SS28	SS29	SS30	SS31	SS33
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Moisture	%	7.9	16	3.7	13	7.2

Moisture						
Our Reference		227977-92	227977-93	227977-94	227977-95	227977-96
Your Reference	UNITS	SS35	Dup1	Dup2	Dup3	Dup4
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	11/10/2019	11/10/2019	11/10/2019	11/10/2019	11/10/2019
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Moisture	%	2.5	12	12	5.2	8.2

Moisture		
Our Reference		227977-97
Your Reference	UNITS	Dup5
Date Sampled		08/10/2019
Type of sample		Soil
Date prepared	-	11/10/2019
Date analysed	-	14/10/2019
Moisture	%	2.0

Asbestos ID - soils						
Our Reference		227977-16	227977-18	227977-20	227977-22	227977-28
Your Reference	UNITS	BH206_0.1	BH207_0.2-0.3	BH208_0.1- 0.3	BH209_0.1-0.3	BH212_0-0.2
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Sample mass tested	g	Approx. 35g	Approx. 30g	Approx. 30g	Approx. 40g	Approx. 35g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown fine-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		227977-30	227977-37	227977-40	227977-46	227977-50
Your Reference	UNITS	BH213_0.1	BH216_0.5-0.7	BH218_0.2-0.3	BH221_0.2-0.3	BH223_0.2-0.3
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Sample mass tested	g	Approx. 30g	Approx. 25g	Approx. 40g	Approx. 35g	Approx. 30g
Sample Description	-	Brown coarse-grained soil & rocks	Grey sandy soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown clayey soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		227977-54	227977-56	227977-58	227977-59	227977-60
Your Reference	UNITS	BH225_0.1-0.2	BH226_0.2-0.3	SS1	SS2	SS3
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Sample mass tested	g	Approx. 25g	Approx. 30g	Approx. 40g	Approx. 40g	Approx. 40g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		227977-61	227977-63	227977-64	227977-66	227977-68
Your Reference	UNITS	SS4	SS6	SS7	SS9	SS11
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	14/10/2019	14/10/2019	14/10/2019	14/10/2019	14/10/2019
Sample mass tested	g	Approx. 40g	Approx. 45g	Approx. 35g	Approx. 50g	Approx. 30g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Grey sandy soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.

Method ID	Methodology Summary
Org-012/017	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-6	227977-3
Date extracted	-			11/10/2019	1	11/10/2019	11/10/2019		11/10/2019	11/10/2019
Date analysed	-			12/10/2019	1	12/10/2019	12/10/2019		12/10/2019	12/10/2019
TRH C_6 - C_9	mg/kg	25	Org-016	<25	1	<25	<25	0	86	74
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	1	<25	<25	0	86	74
Benzene	mg/kg	0.2	Org-016	<0.2	1	<0.2	<0.2	0	73	65
Toluene	mg/kg	0.5	Org-016	<0.5	1	<0.5	<0.5	0	84	72
Ethylbenzene	mg/kg	1	Org-016	<1	1	<1	<1	0	91	77
m+p-xylene	mg/kg	2	Org-016	<2	1	<2	<2	0	92	79
o-Xylene	mg/kg	1	Org-016	<1	1	<1	<1	0	91	79
naphthalene	mg/kg	1	Org-014	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	87	1	95	83	13	89	99

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	227977-63
Date extracted	-			[NT]	28	11/10/2019	11/10/2019		11/10/2019	11/10/2019
Date analysed	-			[NT]	28	12/10/2019	12/10/2019		12/10/2019	12/10/2019
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	28	<25	<25	0	90	94
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	28	<25	<25	0	90	94
Benzene	mg/kg	0.2	Org-016	[NT]	28	<0.2	<0.2	0	75	81
Toluene	mg/kg	0.5	Org-016	[NT]	28	<0.5	<0.5	0	85	88
Ethylbenzene	mg/kg	1	Org-016	[NT]	28	<1	<1	0	95	97
m+p-xylene	mg/kg	2	Org-016	[NT]	28	<2	<2	0	98	101
o-Xylene	mg/kg	1	Org-016	[NT]	28	<1	<1	0	96	101
naphthalene	mg/kg	1	Org-014	[NT]	28	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	28	89	81	9	90	88

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]	61	11/10/2019	11/10/2019		[NT]	[NT]
Date analysed	-			[NT]	61	12/10/2019	12/10/2019		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	61	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	61	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-016	[NT]	61	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-016	[NT]	61	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-016	[NT]	61	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-016	[NT]	61	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-016	[NT]	61	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-014	[NT]	61	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	61	84	100	17	[NT]	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	77	11/10/2019	11/10/2019		[NT]	[NT]
Date analysed	-			[NT]	77	12/10/2019	12/10/2019		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	77	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	77	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-016	[NT]	77	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-016	[NT]	77	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-016	[NT]	77	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-016	[NT]	77	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-016	[NT]	77	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-014	[NT]	77	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	77	86	84	2	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	227977-3
Date extracted	-			11/10/2019	1	11/10/2019	11/10/2019		11/10/2019	11/10/2019
Date analysed	-			14/10/2019	1	14/10/2019	14/10/2019		14/10/2019	14/10/2019
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	1	<50	<50	0	112	99
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	1	<100	<100	0	70	99
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	1	<100	<100	0	92	104
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	1	<50	<50	0	112	99
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	1	<100	<100	0	70	99
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	1	<100	<100	0	92	104
Surrogate o-Terphenyl	%		Org-003	78	1	88	85	3	112	102

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	227977-63
Date extracted	-			[NT]	28	11/10/2019	11/10/2019		11/10/2019	11/10/2019
Date analysed	-			[NT]	28	14/10/2019	14/10/2019		15/10/2019	15/10/2019
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	28	<50	<50	0	90	99
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	28	<100	<100	0	89	#
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	28	<100	<100	0	106	#
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	28	<50	<50	0	90	99
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	28	<100	<100	0	89	#
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	28	<100	<100	0	106	#
Surrogate o-Terphenyl	%		Org-003	[NT]	28	85	86	1	96	92

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	61	11/10/2019	11/10/2019		[NT]	[NT]
Date analysed	-			[NT]	61	15/10/2019	15/10/2019		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	61	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	61	150	110	31	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	61	340	260	27	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	61	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	61	360	260	32	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	61	150	120	22	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-003	[NT]	61	74	75	1	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	77	11/10/2019	11/10/2019		[NT]	[NT]
Date analysed	-			[NT]	77	15/10/2019	15/10/2019		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	77	120	86	33	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	77	1200	880	31	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	77	620	430	36	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	77	110	82	29	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	77	1600	1100	37	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	77	430	310	32	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-003	[NT]	77	128	102	23	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	227977-3
Date extracted	-			11/10/2019	1	11/10/2019	11/10/2019		11/10/2019	11/10/2019
Date analysed	-			11/10/2019	1	11/10/2019	11/10/2019		11/10/2019	11/10/2019
Naphthalene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	112	108
Acenaphthylene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	102	100
Phenanthrene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	96	96
Anthracene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	94	96
Pyrene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	96	98
Benzo(a)anthracene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	104	108
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012/017	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012/017	<0.05	1	<0.05	<0.05	0	98	94
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	110	1	99	98	1	97	99

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	227977-63
Date extracted	-			[NT]	28	11/10/2019	11/10/2019		11/10/2019	11/10/2019
Date analysed	-			[NT]	28	11/10/2019	11/10/2019		11/10/2019	11/10/2019
Naphthalene	mg/kg	0.1	Org-012/017	[NT]	28	<0.1	<0.1	0	106	118
Acenaphthylene	mg/kg	0.1	Org-012/017	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012/017	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012/017	[NT]	28	<0.1	<0.1	0	98	106
Phenanthrene	mg/kg	0.1	Org-012/017	[NT]	28	<0.1	<0.1	0	98	104
Anthracene	mg/kg	0.1	Org-012/017	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012/017	[NT]	28	<0.1	<0.1	0	98	104
Pyrene	mg/kg	0.1	Org-012/017	[NT]	28	<0.1	<0.1	0	100	108
Benzo(a)anthracene	mg/kg	0.1	Org-012/017	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012/017	[NT]	28	<0.1	<0.1	0	104	100
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012/017	[NT]	28	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012/017	[NT]	28	<0.05	<0.05	0	102	128
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012/017	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012/017	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012/017	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	[NT]	28	101	102	1	106	106

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	61	11/10/2019	11/10/2019		[NT]	[NT]
Date analysed	-			[NT]	61	11/10/2019	11/10/2019		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-012/017	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-012/017	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012/017	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012/017	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-012/017	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-012/017	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012/017	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-012/017	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012/017	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012/017	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012/017	[NT]	61	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012/017	[NT]	61	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012/017	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012/017	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012/017	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	[NT]	61	105	106	1	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	77	11/10/2019	11/10/2019		[NT]	[NT]
Date analysed	-			[NT]	77	11/10/2019	11/10/2019		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-012/017	[NT]	77	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-012/017	[NT]	77	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012/017	[NT]	77	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012/017	[NT]	77	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-012/017	[NT]	77	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-012/017	[NT]	77	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012/017	[NT]	77	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-012/017	[NT]	77	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012/017	[NT]	77	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012/017	[NT]	77	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012/017	[NT]	77	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012/017	[NT]	77	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012/017	[NT]	77	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012/017	[NT]	77	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012/017	[NT]	77	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	[NT]	77	113	114	1	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	227977-63
Date extracted	-			11/10/2019	28	11/10/2019	11/10/2019		11/10/2019	11/10/2019
Date analysed	-			11/10/2019	28	11/10/2019	11/10/2019		11/10/2019	11/10/2019
HCB	mg/kg	0.1	Org-005	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	28	<0.1	<0.1	0	75	68
gamma-BHC	mg/kg	0.1	Org-005	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	<0.1	28	<0.1	<0.1	0	78	78
Heptachlor	mg/kg	0.1	Org-005	<0.1	28	<0.1	<0.1	0	69	62
delta-BHC	mg/kg	0.1	Org-005	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	<0.1	28	<0.1	<0.1	0	79	72
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	28	<0.1	<0.1	0	79	76
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	<0.1	28	<0.1	<0.1	0	79	67
Dieldrin	mg/kg	0.1	Org-005	<0.1	28	<0.1	<0.1	0	89	82
Endrin	mg/kg	0.1	Org-005	<0.1	28	<0.1	<0.1	0	78	74
pp-DDD	mg/kg	0.1	Org-005	<0.1	28	<0.1	<0.1	0	81	78
Endosulfan II	mg/kg	0.1	Org-005	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	28	<0.1	<0.1	0	69	72
Methoxychlor	mg/kg	0.1	Org-005	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	99	28	99	99	0	93	88

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	61	11/10/2019	11/10/2019		[NT]	[NT]
Date analysed	-			[NT]	61	14/10/2019	14/10/2019		[NT]	[NT]
HCB	mg/kg	0.1	Org-005	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-005	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-005	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-005	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-005	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-005	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-005	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-005	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-005	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	[NT]	61	93	91	2	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	227977-63
Date extracted	-			11/10/2019	28	11/10/2019	11/10/2019		11/10/2019	11/10/2019
Date analysed	-			11/10/2019	28	11/10/2019	11/10/2019		11/10/2019	11/10/2019
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	28	<0.1	<0.1	0	102	136
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	28	<0.1	<0.1	0	95	112
Dimethoate	mg/kg	0.1	Org-008	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	<0.1	28	<0.1	<0.1	0	94	122
Fenitrothion	mg/kg	0.1	Org-008	<0.1	28	<0.1	<0.1	0	112	122
Malathion	mg/kg	0.1	Org-008	<0.1	28	<0.1	<0.1	0	100	124
Parathion	mg/kg	0.1	Org-008	<0.1	28	<0.1	<0.1	0	106	114
Ronnel	mg/kg	0.1	Org-008	<0.1	28	<0.1	<0.1	0	96	118
Surrogate TCMX	%		Org-008	99	28	99	99	0	93	107

QUALITY CONTROL: Organophosphorus Pesticides						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	61	11/10/2019	11/10/2019		[NT]	[NT]
Date analysed	-			[NT]	61	14/10/2019	14/10/2019		[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-008	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-008	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-008	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-008	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-008	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-008	[NT]	61	93	91	2	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	227977-63
Date extracted	-			11/10/2019	28	11/10/2019	11/10/2019		11/10/2019	11/10/2019
Date analysed	-			11/10/2019	28	11/10/2019	11/10/2019		11/10/2019	11/10/2019
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	28	<0.1	<0.1	0	116	85
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	28	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	99	28	99	99	0	93	110

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	61	11/10/2019	11/10/2019		[NT]	[NT]
Date analysed	-			[NT]	61	14/10/2019	14/10/2019		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	61	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	[NT]	61	93	91	2	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	227977-3
Date prepared	-			14/10/2019	1	14/10/2019	14/10/2019		14/10/2019	14/10/2019
Date analysed	-			14/10/2019	1	14/10/2019	14/10/2019		14/10/2019	14/10/2019
Arsenic	mg/kg	4	Metals-020	<4	1	4	5	22	107	90
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	107	91
Chromium	mg/kg	1	Metals-020	<1	1	9	14	43	116	98
Copper	mg/kg	1	Metals-020	<1	1	20	30	40	112	104
Lead	mg/kg	1	Metals-020	<1	1	10	13	26	114	92
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	99	78
Nickel	mg/kg	1	Metals-020	<1	1	12	16	29	107	92
Zinc	mg/kg	1	Metals-020	<1	1	40	61	42	110	82

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	227977-63
Date prepared	-			[NT]	28	14/10/2019	14/10/2019		14/10/2019	14/10/2019
Date analysed	-			[NT]	28	14/10/2019	14/10/2019		14/10/2019	14/10/2019
Arsenic	mg/kg	4	Metals-020	[NT]	28	7	7	0	104	95
Cadmium	mg/kg	0.4	Metals-020	[NT]	28	0.8	0.7	13	105	92
Chromium	mg/kg	1	Metals-020	[NT]	28	36	50	33	113	92
Copper	mg/kg	1	Metals-020	[NT]	28	150	310	70	110	75
Lead	mg/kg	1	Metals-020	[NT]	28	73	150	69	111	92
Mercury	mg/kg	0.1	Metals-021	[NT]	28	<0.1	<0.1	0	82	91
Nickel	mg/kg	1	Metals-020	[NT]	28	24	36	40	105	90
Zinc	mg/kg	1	Metals-020	[NT]	28	450	820	58	106	87

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	227977-94
Date prepared	-			[NT]	61	14/10/2019	14/10/2019		14/10/2019	14/10/2019
Date analysed	-			[NT]	61	14/10/2019	14/10/2019		14/10/2019	14/10/2019
Arsenic	mg/kg	4	Metals-020	[NT]	61	<4	<4	0	95	95
Cadmium	mg/kg	0.4	Metals-020	[NT]	61	<0.4	<0.4	0	94	92
Chromium	mg/kg	1	Metals-020	[NT]	61	36	35	3	104	97
Copper	mg/kg	1	Metals-020	[NT]	61	140	99	34	99	98
Lead	mg/kg	1	Metals-020	[NT]	61	61	50	20	101	93
Mercury	mg/kg	0.1	Metals-021	[NT]	61	<0.1	<0.1	0	89	84
Nickel	mg/kg	1	Metals-020	[NT]	61	28	32	13	94	95
Zinc	mg/kg	1	Metals-020	[NT]	61	420	290	37	98	86

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	77	14/10/2019	14/10/2019		[NT]	[NT]
Date analysed	-			[NT]	77	14/10/2019	14/10/2019		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	77	8	11	32	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	77	1	1	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	77	130	140	7	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	77	850	730	15	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	77	370	310	18	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	77	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	77	56	55	2	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	77	6000	6100	2	[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]	93	14/10/2019	14/10/2019		[NT]	[NT]
Date analysed	-			[NT]	93	14/10/2019	14/10/2019		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	93	5	5	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	93	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	93	19	18	5	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	93	13	15	14	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	93	11	13	17	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	93	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	93	6	7	15	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	93	40	41	2	[NT]	[NT]

Result Definitions

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

Quality Control Definitions

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

Report Comments

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

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 227977-28 for Cu, Pb & Zn. Therefore a triplicate result has been issued as laboratory sample number 227977-101.

TRH Soil C10-C40 NEPM - # Percent recovery for the matrix spike is not possible to report as the high concentration of analytes in sample 227977-63 has caused interference.
Percent recovery for the surrogate is not possible to report as the high concentration of analytes in sample 227977-84 and 85 have caused interference.

Andrew Fitzsimons

From: Robert Mehaffey <rmehaffey@martens.com.au>
Sent: Tuesday, 15 October 2019 10:25 AM
To: Andrew Fitzsimons
Cc: Gray Taylor; Richard Kightley; Samplereceipt; Charles Zhao
Subject: RE: 7209

Follow Up Flag: Follow up
Flag Status: Flagged

Ref: 227977-A
TAT: std
Due: 22/10/19

Hi Fitzy,

Can we get some additional testing completed for these samples?

- 7209/BH205/0-0.1 – tested for CEC and pH (CaCl) -14
- 7209/BH210/0-0.2 – tested for CEC and pH (CaCl) - 23
- ~~7209/BH214/0.1 – tested for CEC and pH (CaCl)~~ -32
- 7209/BH221/0.2-0.3 – tested for CEC and pH (CaCl) - 46

Standard TAT is fine.

Let me know if there are any issues.

Regards,
Rob

From: Robert Mehaffey
Sent: Thursday, 10 October 2019 4:22 PM
To: 'Andrew Fitzsimons' <AFitzsimons@envirolab.com.au>
Cc: Gray Taylor <gtaylor@martens.com.au>; Richard Kightley <rkightley@martens.com.au>; Samplereceipt <Samplereceipt@envirolabservices.com.au>; Charles Zhao <czhao@martens.com.au>
Subject: RE: 7209

Hey Fitzy,

Thanks for that, can you please test BH209_0.1-0.3 for Combo 6a instead of 0.5-0.7?

The other sample can go on hold for now.

Cheers,
Rob

From: Andrew Fitzsimons [mailto:AFitzsimons@envirolab.com.au]
Sent: Thursday, 10 October 2019 2:51 PM
To: Charles Zhao <czhao@martens.com.au>; Samplereceipt <Samplereceipt@envirolabservices.com.au>
Cc: Gray Taylor <gtaylor@martens.com.au>; Robert Mehaffey <rmehaffey@martens.com.au>; Richard Kightley <rkightley@martens.com.au>
Subject: RE: 7209

Hi Charles
Thanks for providing the electronic COC.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 227977-A

Client Details

Client	Martens & Associates Pty Ltd
Attention	Robert Mehaffey
Address	Suite 201, 20 George St, Hornsby, NSW, 2077

Sample Details

Your Reference	**P1907209 - 28 Yarrunga Street, Prestons**
Number of Samples	100 Soil
Date samples received	09/10/2019
Date completed instructions received	15/10/2019

Analysis Details

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

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

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

Report Details

Date results requested by	22/10/2019
Date of Issue	21/10/2019

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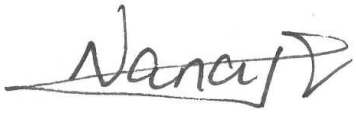
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Jaimie Loa-Kum-Cheung, Metals Supervisor
Priya Samarawickrama, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

CEC					
Our Reference		227977-A-14	227977-A-23	227977-A-32	227977-A-46
Your Reference	UNITS	BH205_0.0-0.1	BH210_0-0.1	BH214_0.1	BH221_0.2-0.3
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	18/10/2019	18/10/2019	18/10/2019	18/10/2019
Date analysed	-	18/10/2019	18/10/2019	18/10/2019	18/10/2019
Exchangeable Ca	meq/100g	11	4.5	0.5	2.2
Exchangeable K	meq/100g	0.4	0.3	0.2	<0.1
Exchangeable Mg	meq/100g	7.6	6.4	6.5	0.24
Exchangeable Na	meq/100g	0.28	0.47	1.8	<0.1
Cation Exchange Capacity	meq/100g	19	12	8.9	2.6

Misc Inorg - Soil					
Our Reference		227977-A-14	227977-A-23	227977-A-32	227977-A-46
Your Reference	UNITS	BH205_0.0-0.1	BH210_0-0.1	BH214_0.1	BH221_0.2-0.3
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	17/10/2019	17/10/2019	17/10/2019	17/10/2019
Date analysed	-	17/10/2019	17/10/2019	17/10/2019	17/10/2019
pH 1:5 soil:$CaCl_2$	pH Units	5.7	4.7	4.2	7.6

Method ID	Methodology Summary
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Metals-009	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-AES analytical finish.

QUALITY CONTROL: CEC						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			18/10/2019	32	18/10/2019	18/10/2019		18/10/2019	[NT]
Date analysed	-			18/10/2019	32	18/10/2019	18/10/2019		18/10/2019	[NT]
Exchangeable Ca	meq/100g	0.1	Metals-009	<0.1	32	0.5	0.5	0	97	[NT]
Exchangeable K	meq/100g	0.1	Metals-009	<0.1	32	0.2	0.2	0	103	[NT]
Exchangeable Mg	meq/100g	0.1	Metals-009	<0.1	32	6.5	6.9	6	96	[NT]
Exchangeable Na	meq/100g	0.1	Metals-009	<0.1	32	1.8	1.9	5	103	[NT]

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			17/10/2019	32	17/10/2019	17/10/2019		17/10/2019	[NT]
Date analysed	-			17/10/2019	32	17/10/2019	17/10/2019		17/10/2019	[NT]
pH 1:5 soil:$CaCl_2$	pH Units		Inorg-001	[NT]	32	4.2	4.2	0	101	[NT]

Result Definitions

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PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
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Andrew Fitzsimons

From: Robert Mehaffey <rmehaffey@martens.com.au>
Sent: Friday, 18 October 2019 11:58 AM
To: Ken Nguyen
Cc: Richard Kightley; Gray Taylor; Charles Zhao; Samplereceipt
Subject: RE: Results for Registration 227977 P1907209 - 28 Yarrunga Street, Prestons

Follow Up Flag: Follow up
Flag Status: Flagged

Ref: 227977 - B
TAT: std
Due: 25/10/19

Hi Ken,

Can we please get the following additional testing completed for these samples:

- BH212/0.5 – 0.7 – tested for 8 HM - 29
- BH221/0.7 – 0.8 – tested for 8 HM - 47
- BH225/0.6 – 0.7 – tested for 8 HM - 55
- SS14 – tested for 8 HM - 71
- SS16 – tested for 8 HM - 73
- SS18 – tested for 8 HM - 75
- SS19 – tested for 8 HM - 76

Standard TAT is fine.

Let me know if there are any issues.

Regards,
Rob

From: Ken Nguyen [mailto:KNguyen@envirolab.com.au]
Sent: Wednesday, 16 October 2019 4:40 PM
To: Lara Tintinger <ltintinger@martens.com.au>; Richard Kightley <rkightley@martens.com.au>; Robert Mehaffey <rmehaffey@martens.com.au>; Gray Taylor <gtaylor@martens.com.au>; Charles Zhao <czhao@martens.com.au>
Subject: Results for Registration 227977 P1907209 - 28 Yarrunga Street, Prestons

Please refer to attached for:
a copy of the Certificate of Analysis
a copy of the COC/paperwork received from you
ESDAT Extracts
an Excel or .csv file containing the results
a copy of the Invoice

Please note that a hard copy will not be posted.

Enquiries should be made directly to:
customerservice@envirolab.com.au

How did we do? Send Feedback

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 227977-B

Client Details

Client	Martens & Associates Pty Ltd
Attention	Robert Mehaffey
Address	Suite 201, 20 George St, Hornsby, NSW, 2077

Sample Details

Your Reference	**P1907209 - 28 Yarrunga Street, Prestons**
Number of Samples	100 Soil
Date samples received	09/10/2019
Date completed instructions received	18/10/2019

Analysis Details

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

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

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

Report Details

Date results requested by	25/10/2019
Date of Issue	24/10/2019

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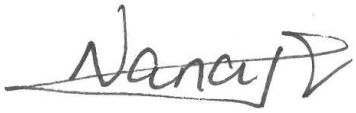
Results Approved By
Loren Bardwell, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

Acid Extractable metals in soil						
Our Reference		227977-B-29	227977-B-47	227977-B-55	227977-B-71	227977-B-73
Your Reference	UNITS	BH212_0.5-0.7	BH221_0.7-0.8	BH225_0.6-0.7	SS14	SS16
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2019	21/10/2019	21/10/2019	21/10/2019	21/10/2019
Date analysed	-	21/10/2019	21/10/2019	21/10/2019	21/10/2019	21/10/2019
Arsenic	mg/kg	<4	10	9	<4	17
Cadmium	mg/kg	<0.4	<0.4	<0.4	3	<0.4
Chromium	mg/kg	7	21	18	210	51
Copper	mg/kg	19	19	14	67	880
Lead	mg/kg	7	21	19	220	420
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	6	5	28	20
Zinc	mg/kg	25	57	44	4,300	2,900

Acid Extractable metals in soil			
Our Reference		227977-B-75	227977-B-76
Your Reference	UNITS	SS18	SS19
Date Sampled		08/10/2019	08/10/2019
Type of sample		Soil	Soil
Date prepared	-	21/10/2019	21/10/2019
Date analysed	-	21/10/2019	21/10/2019
Arsenic	mg/kg	10	11
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	23	77
Copper	mg/kg	330	2,500
Lead	mg/kg	170	830
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	9	34
Zinc	mg/kg	1,100	5,500

Moisture						
Our Reference		227977-B-29	227977-B-47	227977-B-55	227977-B-71	227977-B-73
Your Reference	UNITS	BH212_0.5-0.7	BH221_0.7-0.8	BH225_0.6-0.7	SS14	SS16
Date Sampled		08/10/2019	08/10/2019	08/10/2019	08/10/2019	08/10/2019
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2019	21/10/2019	21/10/2019	21/10/2019	21/10/2019
Date analysed	-	22/10/2019	22/10/2019	22/10/2019	22/10/2019	22/10/2019
Moisture	%	16	12	14	16	5.3

Moisture			
Our Reference		227977-B-75	227977-B-76
Your Reference	UNITS	SS18	SS19
Date Sampled		08/10/2019	08/10/2019
Type of sample		Soil	Soil
Date prepared	-	21/10/2019	21/10/2019
Date analysed	-	22/10/2019	22/10/2019
Moisture	%	10	5.0

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date prepared	-			21/10/2019	29	21/10/2019	21/10/2019		21/10/2019	[NT]
Date analysed	-			21/10/2019	29	21/10/2019	21/10/2019		21/10/2019	[NT]
Arsenic	mg/kg	4	Metals-020	<4	29	<4	<4	0	103	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	29	<0.4	<0.4	0	99	[NT]
Chromium	mg/kg	1	Metals-020	<1	29	7	6	15	104	[NT]
Copper	mg/kg	1	Metals-020	<1	29	19	16	17	104	[NT]
Lead	mg/kg	1	Metals-020	<1	29	7	6	15	108	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	29	<0.1	<0.1	0	97	[NT]
Nickel	mg/kg	1	Metals-020	<1	29	3	3	0	96	[NT]
Zinc	mg/kg	1	Metals-020	<1	29	25	21	17	104	[NT]

Result Definitions

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

Quality Control Definitions

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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