D21/78776

Douglas Partners
Geotechnics / Environment / Groundwater

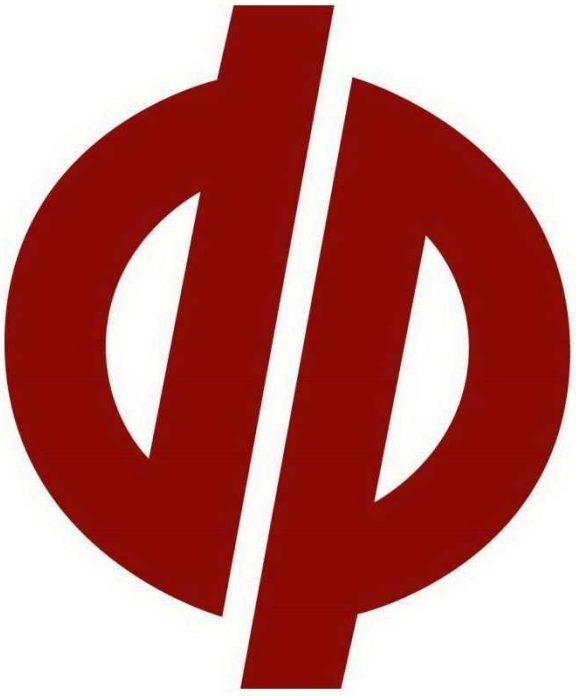
Integrated Practical Solutions

Report on
Detailed Site Investigation (Contamination)

Marsden High School Repurposed to Netball Facility
Marsden High School, West Ryde

Prepared for
School Infrastructure New South Wales (SINSW)

Project 99872.01
February 2021



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

	Signature	Date
Author	pp Lisa Teng	17 February 2021
Reviewer		17 February 2021

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1. Introduction

Douglas Partners Pty Ltd (DP) has been engaged by School Infrastructure New South Wales (SINSW) complete this detailed site investigation (contamination) (DSI) for a proposed redevelopment of Marsden High School, West Ryde (the site) into a netball facility. The site is shown on Drawing 1, Appendix A.

The investigation was undertaken in accordance with DP's proposal SYD201127 dated 16 October 2020.

It is understood that the school will be relocated to a nearby campus as part of wider education upgrades in the Ryde Local Government area. The existing school grounds are proposed to be developed to a new netball facility once the school has relocated. Specific details of the development have not been confirmed at this early stage.

It is understood that the report will be used to support the initial master planning phase and concept / schematic design process of the project. Therefore, a limited sampling programme was adopted for the DSI.

DP previously completed a report titled *Preliminary (Contamination) Site Investigation* (The PSI) (DP, 2020) for SINSW to assess the potential for contamination at the site based on past and present land uses. The PSI recommended an intrusive soil investigation and depending on the proposed development design, a preliminary waste classification. This current DSI addresses that recommendation.

This report must be read in conjunction with all appendices including the notes provided in Appendix B.

The PSI was undertaken concurrently with an intrusive geotechnical investigation[1] which is reported under a separate cover.

The following key guidelines were consulted in the preparation of this report:

- NEPC National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM] (NEPC, 2013); and
- NSW EPA Guidelines for Consultants Reporting on Contaminated Land (NSW EPA, 2020).

[1] Douglas Partners Pty Ltd, *'Report on Geotechnical Assessment, Marsden High School Repurposed to Netball Facility, Marsden High School, Ryde*, dated February 2021, reference: 99872.00.R.002 (DP, 2021).

2. Scope of Work

The scope of works comprised an intrusive investigation as described below:

- Drilling of 23 boreholes across the site using a track mounted drilling rig;
- Collection of soil samples for contamination testing from all boreholes at regular intervals and where signs of contamination were observed;
- Screening of all soil samples for volatile organic compounds (VOC) using a photo-ionisation detector (PID);
- Dispatch and analysis of 45 selected soil samples and quality control samples for analysis of a combination of the following contaminants and parameters at a NATA accredited laboratory:
  - Metals / metalloids (arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc);
  - Total recoverable hydrocarbons (TRH);
  - Benzene, toluene, ethylbenzene and xylenes (BTEX);
  - Polycyclic aromatic hydrocarbons (PAH);
  - Organochlorine pesticides (OCP);
  - Organophosphorus pesticides (OPP);
  - Polychlorinated biphenyls (PCB);
  - Total phenols;
  - Asbestos;
  - pH; and
  - Cation exchange capacity (CEC).
- Field sampling and laboratory analysis generally consistent with standard environmental protocols, including a quality assurance and quality control (QA / QC) plan consisting of 10% replicate sampling, trip spikes, trip blanks, appropriate chain-of-custody procedures and laboratory QA / QC testing;
- Interpretation of the analytical results against the adopted site assessment criteria (SAC);
- Data quality assessment;
- Updating the conceptual site model (CSM); and
- Preparation of this report detailing the methodology and results of the investigation with reference to EPA approved guidelines.

The investigation was undertaken in accordance with project specific data quality objectives (DQO) as discussed in Appendix D.

3. Site Information

Site Address	Marsden High School, West Ryde
Legal Description	Lot 1, Deposited Plan 220808
Area	Approximately 5.5 ha
Zoning	Zone SP2 Infrastructure
Local Council Area	Ryde City Council
Current Use	High School
Surrounding Uses	North - Residential East - Residential and Public Park South - Ermington Public School West - Residential

The site boundary is shown on Figure 1.

Figure 1: Site Location

4. Environmental Setting

Regional Topography	The areas the surrounding site generally slope sharply in north-east and south-east directions towards Archers Creek which runs along the eastern side of the site.
Site Topography	The overall site slopes down from the north western corner to the south east towards Archer Creek. The surface levels across the site fall from about RL 42 m relative to Australian Height Datum (AHD) near the north western corner to about RL 30 m, AHD on the south eastern corner.
Soil Landscape	Reference to Sydney 1:100,000 Soils Landscape Sheet indicates that the site is within Glenorie soil landscape which typically comprises undulating to rolling low hills on Wianamatta Group shales.
Geology	Reference to Sydney 1:100,000 Geology Sheet indicates that the site is underlain by Wianamatta Group Ashfield Shale; black to dark-grey shale and laminate sedimentary rock the from Triassic age.
Acid Sulfate Soils	Reference to the 1:25 000 Acid Sulphate Soils (ASS) Risk map indicates that the site is in an area of no known occurrence of acid sulphate soils.
Surface Water	Archers Creek is present along the eastern portion of the site and flows south-east downgradient, surface water is expected to infiltrate into exposed soils, sheet east into Archers Creek and stormwater drains at Brush Road.
Groundwater	No registered groundwater bores are located within 1 km of the site. No free groundwater was observed during previous investigations at the site (refer to Section 6).

Further Detail on the environmental setting is provided in DP (2020).

5. Previous Reports and Site History

5.1 Preliminary (Contamination) Site Investigation (DP, 2020)

DP (2020) comprised a desktop study and search of the relevant site history documentation including a review of the title deeds, historical aerial photography and previous investigation reports, and a search of the public registers and planning records.

The site history information suggests that the site has been owned by the NSW Government and used as a school since at least the 1960s. Information from historical aerial photographs suggest that the site has continued to be developed since the 1960's into the school as it is currently. Prior to becoming a school, the site appeared to have been vacant since at least the 1930s and it is unknown what the site may have been used for prior to this, but aerial imagery indicates the site may have been used for agricultural purposes.

Based on the outcomes of the PSI it was considered that the risk of significant or widespread contamination at the site is low to moderate; given the risk of asbestos on the ground or in the fill, other potential contaminants in the fill and some possible low level application of herbicides and pesticides at the site.

In order to achieve an outcome stating that the site is suitable or can be made suitable for the proposed development (as required under SEPP55), it was recommended that an intrusive investigation be undertaken. It was recommended that the intrusive works include a soil and groundwater assessment and depending on the proposed development design, a preliminary waste classification. Given the intrusive investigation was proposed to be undertaken prior to demolition of the buildings on site, a limited sampling program was recommended with additional sampling following demolition to assess the areas within the footprints of the buildings. An updated hazardous material building survey was also recommended for the site prior to renovation or demolition works.

6. Preliminary Conceptual Site Model

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

Potential Sources

The PSI identified the following potential sources of contamination and associated contaminants of potential concern (COPC).

- S1: Fill: Associated with levelling and forming the site;
  - COPC include metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylene (BTEX), polycyclic aromatic hydrocarbons (PAH), polychlorinated biphenyls (PCB), organochlorine pesticides (OCP), organophosphorus pesticides (OPP), phenols and asbestos.
- S2: Previous and current general site maintenance and previous agricultural activities (including low level application of pesticides, fertilisers and herbicides);
  - COPC include OPP, OCP, metals and herbicides.
- S3: Former buildings and renovations of current buildings on-site;
  - COPC include asbestos, synthetic mineral fibres (SMF), lead (in paint) and PCB.
- S4: Unsealed carparks on-site;
  - COPC include metals (lead), TRH, BTEX and PAH.

Potential Receptors

The following potential human receptors have been identified:

- R1: Current users [secondary school];

- R2: Construction and maintenance workers;
- R3: End users [public (open space)]; and
- R4: Adjacent site users [primary school and residential].

The following potential environmental receptors have been identified:

- R5: Surface water [Archer Creek];
- R6: Groundwater; and
- R7: Terrestrial ecology.

Potential Pathways

The following potential pathways have been identified:

- P1: Ingestion and dermal contact;
- P2: Inhalation of dust and/or vapours;
- P3: Surface water run-off;
- P4: Leaching of contaminants and vertical migration into groundwater;
- P5: Lateral migration of groundwater providing base flow to water bodies; and
- P6: Contact with terrestrial ecology.

Summary of Potentially Complete Exposure Pathways

A 'source - pathway - receptor' approach has been used to assess the potential risks of harm being caused to human or environmental receptors from contamination sources on or in the vicinity of the site, via exposure pathways (potential complete pathways). The possible pathways between the above sources (S1 to S4) and receptors (R1 to R7) are provided in below Table 1.

Table 1: Summary of Potentially Complete Exposure Pathways

Source and COPC	Transport Pathway	Receptor	Risk Management Action
S1: Fill COPC: Metals, TRH, BTEX, PAH, OPP, OCP, PCB and asbestos. S2: Previous and current general site maintenance	P1: Ingestion and dermal contact P2: Inhalation of dust and/or vapours	R1: Current users [secondary school] R2: Construction and maintenance workers R3: End users [public (open space)] R4: Adjacent site users [primary school and residential]	An intrusive investigation is recommended to assess possible contamination including testing of the soil and groundwater. This can be undertaken in a staged manner whereby the soil results may inform
	P3: Surface water run-off	R5: Surface water [Archer Creek]	

Source and COPC	Transport Pathway	Receptor	Risk Management Action
and agricultural use COPC: OPPs, OCPs, metals and herbicides*. S4: Unsealed carparks COPC: metals, TRH, BTEX and PAHs.	P4: Lateral migration of groundwater providing base flow to water bodies		the need for a groundwater assessment.
	P5: Leaching of contaminants and vertical migration into groundwater	R6: Groundwater	
	P6: Contact with terrestrial ecology	R7: Terrestrial ecology	
S3: Former buildings and renovations of current buildings on site COPC: Asbestos, SMF, lead (in paint) and PCB	P1: Ingestion and dermal contact P2: Inhalation of dust and/or vapours	R1: Current users [secondary school] R2: Construction and maintenance workers R3: End users [public (open space)] R4: Adjacent site users [primary school and residential]	To complement the asbestos register previously generated, a hazardous building materials survey is recommended to update the current register and identify any SMF, lead paint and PCB in the buildings.
	P5: Leaching of contaminants and vertical migration into groundwater	R6: Groundwater	As mentioned above, an intrusive investigation is recommended to assess the potential impact on the soil and, if impacted, asses the risk to groundwater.

*Herbicide contamination is most likely to occur via spills where they are stored and mixed / diluted. Therefore contamination would most likely have occurred in maintenance related buildings and not the grounds and fields. As the school is currently operating, sampling of areas where herbicides may have been stored / mixed was not possible and therefore samples collected during the assessment were not analysed for herbicides.

7. Sampling and Analysis Quality Plan

7.1 Data Quality Objectives

The PSI was devised with reference to the seven-step data quality objective process which is provided in Appendix B Schedule B2, NEPC (2013). The DQO process is outlined in Appendix D.

7.2 Soil Sampling Rationale

A systematic sampling strategy to determine borehole locations was adopted. Locations were based on areas of access and the CSM with the rationale provided below. Borehole locations are shown on Drawing 1, in Appendix A.

Based on EPA (1995) over 60 sampling points would be required for a site of approximately 5.5 ha for site characterisation based on the detection of circular hot spots using a systemic grid sampling pattern. Given the limited nature of this investigation as the school is currently operating, a sampling density of approximately 35% of the recommended sampling points for the site was adopted. A total of 23 test locations (BH01 to BH23) were therefore positioned across accessible areas of the site excluding the footprint of the operating school buildings in the north-west of the site due to access constraints.

Soil samples were collected from each borehole at depths of approximately 0.1 m, 0.5 m, 1.0 m and every 0.5 m thereafter, and changes in lithology or signs of contamination.

The general sampling methods are described in the field work methodology, included in Appendix E.

8. Site Assessment Criteria

The site assessment criteria (SAC) applied in the current investigation are informed by the CSM (Section 6) which identified human and environmental receptors to potential contamination on the site. Analytical results are assessed (as a Tier 1 assessment) against the SAC comprising primarily the investigation and screening levels of Schedule B1 of NEPC (2013).

The investigation and screening levels applied in the current investigation comprise levels adopted for a generic recreational land use scenario. The derivation of the SAC is included in Appendix G and the adopted SAC are listed on the summary analytical results tables in Appendix H.

9. Results

9.1 Field Work Results

The borehole logs for this assessment are included in Appendix F. The logs recorded the following general sub-surface profile:

- **HARDSTAND:** asphaltic concrete over roadbase was observed in BH3 to BH5, BH11 and BH14 to depths of between 0.1 m and 0.25 m bgl. Concrete hardstand was observed in BH19 to a depth of 0.07 m bgl;
- **TOPSOIL:** INSERT DESCRIPTION was observed in BH1, BH2, BH6, BH8 to BH10, BH13, BH15, BH16 and BH18 to depths of between 0.1 m and 0.3 m bgl;
- **FILL:** clayey fill with silty sand or gravelly sand with some sandstone cobbles to depths of between 0.3 m and 3.0 m bgl; overlying;
- **RESIDUAL CLAY:** stiff to very stiff and hard clay to depths of between 0.7 m and 4.9 m bgl; overlying; and
- **WEATHERED ROCK:** Very low to low strength, weathered shale and sandstone to borehole termination depths of between 0.3 m and 4.95 m bgl.

Fill was observed to depths of between 0.02 m and 3 m bgl and anthropogenic inclusions were observed in filling including brick (BH19), glass (BH04) and ash (BH07).

The PID screening indicated that the sub-surface conditions were generally absent of VOC with all recorded values less than 5 ppm.

Free groundwater was observed whilst drilling BH07 at 3.7 m bgl. It should be noted that groundwater levels are affected by climatic conditions and soil permeability and will therefore vary with time.

There were no other apparent records of visual or olfactory evidence (e.g., staining, odours, free phase product) to suggest the presence of contamination within the soils or groundwater observed in the investigation.

Photographs of the field work during the assessment are attached in Appendix C.

9.2 Laboratory Analytical Results

The results of laboratory analysis are summarised in the following tables in Appendix H:

- Table H1: Summary of Results - Metals, TRH, BTEX and PAH;
- Table H2: Summary of Results - Phenols, OCP, OPP, PCB and asbestos;
- Table H3: Summary of Waste Classification Assessment;
- Table H4: Population Statistics for Nickel Concentrations in Samples; and
- Table H5: Pro UCL 95% Upper Confidence Limit Output.

The laboratory certificates of analysis together with the chain of custody and sample receipt information are provided in Appendix J.

10. Discussion

10.1 Contamination

As shown in the attached Tables H1 and H2, Appendix H, concentrations of the analytes in the soil samples were all less than the adopted SAC. Concentrations of BTEX, phenol, OCP, OPP, PCB and asbestos were below the PQL. Concentrations of TRH and PAH were above the practical quantitation limits (PQL) but below the SAC. Heavy metals were detected in all soil samples; however, the reported concentrations were within the adopted SAC in all samples tested with the exception of the following:

- Nickel in samples BH3/0-0.1 m (57 mg/kg) and BH11/0-0.1 m (54 mg/kg) exceeded the SAC (EIL) criterion of 45 mg/kg.

However, the calculated 95% upper confidence limit of the mathematical average (UCL) for the zinc results falls below the EIL criterion. Therefore, in general accordance with NSW EPA (2014), the 95% UCL zinc concentration has been adopted in this report. The population statistics are shown in Table H4, Appendix H.

10.2 Preliminary Waste Classification

The following Table 2 presents the results of the six step procedure outlined in NSW EPA (2014) for determining the type of waste and the waste classification. This process applies to the fill (including surface soils) at the site, which do not meet the definition of Virgin Excavated Natural Material (VENM).

Table 2: Six Step Classification Procedure

Step	Comments	Rationale
1. Is the waste special waste?	No	No asbestos-containing materials (ACM), clinical or related waste, or waste tyres were observed in the boreholes; Asbestos was not detected by the analytical laboratory.
2. Is the waste liquid waste?	No	The fill comprised a soil matrix.
3. Is the waste "pre-classified"?	No	The fill is not pre-classified with reference to NSW EPA (2014).
4. Does the waste possess hazardous waste characteristics?	No	The fill was not observed to contain or considered at risk to contain explosives, gases, flammable solids, oxidising agents, organic peroxides, toxic substances, corrosive substances, coal tar, batteries, lead paint or dangerous goods containers.

Step	Comments	Rationale
5. Determining a wastes classification using chemical assessment	Conducted	Refer to Table H3 (Appendix H).
6. Is the waste putrescible or non-putrescible?	Non-putrescible	The fill does not contain materials considered to be putrescible [a].

Note: a wastes that are generally not classified as putrescible include soils, timber, garden trimmings, agricultural, forest and crop materials, and natural fibrous organic and vegetative materials (NSW EPA, 2014).

As shown in the attached Table H3, the majority of the results were within the CT1 criteria for general solid waste within the exception of the highlighted results. Samples BH3/0-0.1 m (nickel 57 mg/kg), BH9/0-0.1 m (lead 110 mg/kg) and BH11/0-0.1 m (nickel 54 mg/kg) exceeded the CT1 criteria. Therefore, TCLP analysis was undertaken on these selected samples and the results were within the SCC1 and TCLP1 criteria for general solid waste as defined in EPA (2014). As such, fill described in Section 9.1 is preliminarily classified as general solid waste (non-putrescible, SCC1, TCLP1). This is not a formal waste classification, which needs to be confirmed through additional investigations or sampling during construction works.

10.3 VENM Assessment

The following **Error! Reference source not found.** presents the results of the assessment of natural soils and bedrock at the site with reference to the VENM definition in the POEO Act and the EPA[2] website.
https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/virgin-excavated-natural-material

Table 3: VENM Classification Procedure

Item	Comments	Rationale
1. Is the material natural?	Yes	Natural materials logged in the boreholes as per Section 9.1. These materials underlie the fill at the site.
2. Is the material impacted by manufactured chemicals or process residues?	No	There were no visual or olfactory indicators of chemical contamination of the materials in the boreholes Concentrations of contaminants were considered to be typical of background concentrations (Table H3).
3. Are the materials acid sulfate soils?	No	Refer to Section 4.
4. Are there current or previous land uses that have (or may	No	Previous land uses may have impacted on surface soils overlying the materials. Low chemical concentrations indicate no likely impact on the natural materials.

[2] https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/virgin-excavated-natural-material

Item	Comments	Rationale
have) contaminated the materials?		

As shown in the attached Table H3, the recorded concentrations in natural samples were below typical background concentrations. As such, it is considered that natural materials that underlie the site are likely to be classified as VENM. This is not a formal VENM classification, which needs to be confirmed through further visual and/or analytical confirmation during construction works.

10.4 Data Quality Assurance and Quality Control

The data quality assurance and quality control (QA / QC) results are included in Appendix I. Based on the results of the field QA and field and laboratory QC, and evaluation against the data quality indicators (DQI) it is concluded that the field and laboratory test data obtained are reliable and useable for this assessment.

11. Conclusions and Recommendations

Based on the site observations, field and laboratory analytical results, the risk of widespread gross chemical contamination is considered to be low and it is therefore considered that the site is suitable (from a contamination perspective) for the proposed netball facility, subject to the following:

- For buildings requiring demolition, the removal and disposal of the identified hazardous materials by an appropriately licensed and qualified contractor, at an appropriately licensed disposal facility;
- Validation / clearance of the demolition works area by a qualified occupational hygienist upon completion of demolition and removal of the buildings, confirming that there are no residual asbestos-containing materials or other hazardous materials remaining on the site;
- Additional investigation in building footprints (post demolition) including the analysis for herbicides within the footprint of the groundskeeping area of the school buildings; and
- Implementation of an Unexpected Finds Protocol such that any finds of contamination (e.g., asbestos) can be documented and managed under an appropriate management procedure.

The current results indicate that the fill is likely to be classified as general solid waste (non-putrescible). Given the laboratory results to date, consideration may be given to further investigating the potential to classify some of the fill (in particular, the deeper fill) under the NSW EPA excavated natural material (ENM) resource recovery order. The classification above is preliminary and subject to confirmation prior to removal of soils from the site.

Similarly, natural soils which underlie the site are likely to be classified as VENM, subject to further visual and / or analytical confirmation.

12. References

CRC CARE. (2017). *Risk-based Management and Remediation Guidance for Benzo(a)pyrene.* Technical Report no. 39: Cooperative Research Centre for Contamination Assessment and Remediation of the Environment.

NEPC. (2013). *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM].* Australian Government Publishing Services Canberra: National Environment Protection Council.

NSW EPA. (1995). *Contaminated Sites, Sampling Design Guidelines.* NSW Environment Protection Authority.

NSW EPA. (2014). *Waste Classification Guidelines, Part 1: Classifying Waste.* NSW Environment Protection Authority.

NSW EPA. (2020). *Guidelines for Consultants Reporting on Contaminated Land.* Contaminated Land Guidelines: NSW Environment Protection Authority.

13. Limitations

Douglas Partners (DP) has prepared this report (or services) for this project at Marsden High School, West Ryde in accordance with DP's proposal SYD201127.P.001.Rev0 dated 16 October 2020 and acceptance received from SINSW01425/20 dated 20 October 2020. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of School Infrastructure NSW for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

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

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

The assessment of atypical safety hazards arising from this advice is restricted to the environmental components set out in this report and based on known project conditions and stated design advice and assumptions. While some recommendations for safe controls may be provided, detailed 'safety in design' assessment is outside the current scope of this report and requires additional project data and assessment.

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

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

Asbestos has not been detected by observation or by laboratory analysis, either on the surface of the site, or in filling materials at the test locations sampled and analysed. Building demolition materials, such as brick, glass and ash, were, however, located in previous below-ground filling, and these are considered as indicative of the possible presence of hazardous building materials (HBM), including asbestos.

Although the sampling plan adopted for this investigation is considered appropriate to achieve the stated project objectives, there are necessarily parts of the site that have not been sampled and analysed. This is either due to undetected variations in ground conditions or to budget constraints (as discussed above), or to parts of the site being inaccessible and not available for inspection/sampling as the school is currently operating, or to vegetation preventing visual inspection and reasonable access in the north eastern portion of the site. It is therefore considered possible that HBM, including asbestos, may be present in unobserved or untested parts of the site, between and beyond sampling locations, and hence no warranty can be given that asbestos is not present.

Douglas Partners Pty Ltd

Appendix A

Drawing


As close to existing buildings as possible, roughly within this footprint
Edge of biodiversity area
Centre of oval
SW detention basin
Future landscaped area
Car park footprint
This is the alternative building footprint location
A
B
C
Brush Road
Ermington PS

D21/78776


C
C
A
B
Ermington PS
Winbourne Street
Brush Road
Victoria Road

Appendix B

Notes About this Report

About this Report

Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

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

Appendix C

Site Photographs

Photo 1: Drilling works in the north western portion of site.

Photo 2: Drilling works within Marsden High School Courtyard.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT:	99872.01
	Marsden High School Repurposed to Netball Facility	PLATE No:	1
	Marsden High School, West Ryde	REV:	0
	CLIENT: School Infrastructure New South Wales (SINSW)	DATE	28/01/2021

Photo 3: Drilling works in sports field.

Photo 4: Drilling works in the hardstand playing court.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT:	99872.01
	Marsden High School Repurposed to Netball Facility	PLATE No:	2
	Marsden High School, West Ryde	REV:	0
	CLIENT: School Infrastructure New South Wales (SINSW)	DATE	28/01/2021

Photo 5: Archers Creek present in the eastern portion of site.

Photo 6: Drilling works in the eastern portion of site.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT:	99872.01
	Marsden High School Repurposed to Netball Facility	PLATE No:	3
	Marsden High School, West Ryde	REV:	0
	CLIENT: School Infrastructure New South Wales (SINSW)	DATE	28/01/2021

Photo 7: Archers Creek as it flows into the channel beneath the south eastern portion of site.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT:	99872.01
	Marsden High School Repurposed to Netball Facility	PLATE No:	4
	Marsden High School, West Ryde	REV:	0
	CLIENT: School Infrastructure New South Wales (SINSW)	DATE	28/01/2021

Appendix D

Data Quality Objectives and Data Quality Indicators

Appendix D
Data Quality Objectives and Data Quality Indicators
Marsden High School, West Ryde

D1.0 Data Quality Objectives

The DSI has been devised broadly in accordance with the seven-step data quality objective (DQO) process which is provided in Appendix B, Schedule B2 of NEPC *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM]* (NEPC, 2013).

Step	Summary
1: State the problem	The objective of the investigation is to confirm the contamination status of the site with respect to the proposed land use. The report is being undertaken support the initial master planning phase and concept / schematic design process of the project. A preliminary conceptual site model (CSM) has been prepared (Section 6) for the proposed development. The project team consisted of experienced environmental engineers and scientists working in the roles of Project Principal, Project Reviewer, Project Manager, Field staff.
2: Identify the decisions / goal of the study	The site history has identified possible contaminating previous uses which are identified in the CSM (Section 6). The CSM identifies the associated contaminants of potential concern (COPC) and the likely impacted media. The site assessment criteria (SAC) for each of the COPC are detailed in Section 8. The decision is to establish whether or not the results fall below the SAC. On this basis, an assessment of the site's suitability from a contamination perspective and whether (or not) further assessment and / or remediation will be derived.
3: Identify the information inputs	Inputs to the investigation will be the results of analysis of samples to measure the concentration of COPC identified in the CSM (Section 6) at the site using NATA accredited laboratories and methods, where possible. The SAC for each of the COPC are detailed in Section 8. A photoionization detector (PID) will be used on-site to screen soils for VOC. PID readings will be used to inform sample selection for laboratory analysis.
4: Define the study boundaries	The lateral boundaries of the investigation area are shown on Drawing 1, Appendix A. The vertical boundaries are to the extent of contamination impact as determined from the site history assessment and site observations. The assessment is limited to the timeframe over which the field investigation was undertaken. Constraints to the assessment are identified and discussed in the Sampling and Analysis Quality Plan of the report, Section 7.
5: Develop the analytical approach (or decision rule)	The decision rule is to compare all analytical results with SAC (Section 8, based on NEPC (2013)). Where guideline values are absent, other sources of guideline values accepted by NEPC (2013) shall be adopted where possible. Where a sample result exceeds the adopted criterion, a further site-specific assessment will be made as to the risk posed by the presence of that contaminant(s).

Step	Summary
	Initial comparisons will be with individual results then, where required, summary statistics (including mean, standard deviation and 95% upper confidence limit (UCL) of the arithmetic mean (95% UCL)) to assess potential risks posed by the site contamination. Quality control results are to be assessed according to their relative percent difference (RPD) values. For field duplicates, triplicates and laboratory results, RPDs should generally be below 30%; for field blanks and rinsates, results should be at or less than the limits of reporting (NEPC, 2013). The field and laboratory quality assurance assessment is included in Appendix I.
6: Specify the performance or acceptance criteria	Baseline condition: Contaminants at the site and/or statistical analysis of data (in line with NEPC (2013)) exceed human health and environmental SAC and poses a potentially unacceptable risk to receptors (null hypothesis). Alternative condition: Contaminants at the site and statistical analysis of data (in line with NEPC (2013)) complies with human health and environmental SAC and as such, does not pose a potentially unacceptable risk to receptors (alternative hypothesis). Unless conclusive information from the collected data is sufficient to reject the null hypothesis, it is assumed that the baseline condition is true. Uncertainty that may exist due to the above potential decision errors shall be mitigated as follows: As well as a primary screening exercise, the use of the 95% UCL as per NEPC (2013) may be applied, ie: 95% is the defined confidence level associated with the UCL on the geometric mean for contaminant data. The resultant 95%UCL shall subsequently be screened against the corresponding SAC. The statistical assessment will only be able to be applied to certain datasets, such as those obtained via systematic sampling. Identification of areas for targeted sampling will be via professional judgement and errors will not be able to have a probability assigned to them.
7: Optimise the design for obtaining data	As the purpose of the sampling program is to assess for potential contamination across the site, the sampling program is reliant on professional judgement to identify and sample the potentially affected areas. Further details regarding the proposed sampling plan are presented in Section 7.

D1.0 References

NEPC. (2013). *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM].* Australian Government Publishing Services Canberra: National Environment Protection Council.

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Appendix E

Field Work Methodology

Appendix E
Field Work Methodology
Marsden High School, West Ryde

E1.0 Guidelines

The following key guidelines were consulted for the field work methodology:

- NEPC *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM]* (NEPC, 2013).

E2.0 Soil Sampling

Soil sampling is carried out in accordance with DP standard operating procedures. The general sampling and sample management procedures comprise:

- Collect soil samples directly from the nominated sample depth using a solid flight auger;
- Transfer samples in laboratory-prepared glass jars with Teflon lined lids by hand, capping immediately and minimising headspace within the sample jar;
- Collect replicate samples in zip-lock bags for PID screening;
- Wear a new disposable nitrile glove for each sample point thereby minimising potential for cross-contamination;
- Collect 10% replicate samples for QC purposes;
- Label sample containers with individual and unique identification details, including project number, sample location and sample depth (where applicable);
- Place samples into a cooled, insulated and sealed container for transport to the laboratory; and
- Use chain of custody documentation.

E2.1 Field Testing

Field testing is carried out in accordance with DP standard operating procedures. The general sampling and sample management procedures comprise:

PID Field Test

- Calibrate the PID with isobutylene gas at 100 ppm and with fresh air prior to commencement of each successive day's field work;
- Allow the headspace in the PID zip-lock bag samples to equilibrate; and
- Screen for volatile organic compounds (VOC) using the PID.

E3.0 References

HEPA. (2020). *PFAS National Environmental Management Plan (NEMP).* Version 2.0: Heads of EPAs Australia and New Zealand and Australian Government Department of the Environment.

NEPC. (2013). *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM].* Australian Government Publishing Services Canberra: National Environment Protection Council.

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Appendix F

Logs and Explanatory Notes

D21/78776

BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 44.8 AHD
EASTING: 321285.9
NORTHING: 6258035.6
DIP/AZIMUTH: 90°/--

BORE No: BH 01
PROJECT No: 99872.00
DATE: 18/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
44	0.2	FILL/TOPSOIL/SILT: low plasticity, brown, trace rootlets, w<PL, generally in a firm condition		A/E	0.0 0.1				
		CLAY CI-CH: medium to high plasticity, red-brown, w<PL, apparently stiff, residual			0.3				
				A/E	0.4 0.5				
		Below 0.5m: very stiff, trace roots		S		B	Bulk Sample 0.3-1.0m 5,8,10 N = 18		
	1				0.95				1
				A/E	1.0 1.1				
					1.5				
43	1.7	CLAY CI: medium plasticity, pale grey with some yellow-brown and red-brown, trace roots and iron indurated gravel, w<PL, very stiff, relict rock structure, extremely weathered Ashfield Shale		S			5,9,14 N = 23		
	2				1.95				2
		Below 2.5m: apparently hard							
42	3				3.0				3
	3.0 3.09	SHALE: dark grey, low strength, Ashfield Shale		S	3.09		8/90 refusal		
		Bore discontinued at 3.09m SPT refusal on low strength shale							
41	4								4
40									

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Solid Flight Auger (TC-bit) to 3.0m
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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D21/78776

BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 33.7 AHD
EASTING: 321400
NORTHING: 6258068.8
DIP/AZIMUTH: 90°/--

BORE No: BH 02
PROJECT No: 99872.00
DATE: 19/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
33.7	0.0	FILL/TOPSOIL/Silty CLAY: medium plasticity, dark brown, trace rootlets, w<PL, generally in a firm condition		A/E	0.0 - 0.1				
33.4	0.3	FILL/CLAY: medium plasticity, dark brown, trace fine sandstone gravel, w<PL, generally in a stiff condition		A/E	0.4 - 0.5				
				S	0.5 - 0.95		2,3,5 N = 8		
				A/E	0.95 - 1.1				
32.4	1.3	CLAY CI-CH: medium to high plasticity, yellow-brown, w<PL, firm, residual		A/E	1.4 - 1.5				
		Below 1.5m: red-brown mottled yellow-brown, trace fine ironstone gravel		S	1.5 - 1.95		2,3,3 N = 6		
				S	3.0 - 3.45		5,7,17 N = 24		
30.4	3.3	Sandy CLAY CL: low to medium plasticity, red-brown, fine to medium sand, trace iron indurated bands, w<PL, very stiff, residual							
29.8	3.9	SANDSTONE: pale grey, low to medium strength, possibly Mittagong Formation or Hawkesbury Sandstone							
29.7	4.0	Bore discontinued at 4.0m Auger refusal on inferred medium strength sandstone							

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Solid Flight Auger (TC-bit) to 4.0m
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 35.8 AHD
EASTING: 321361.6
NORTHING: 6257997.7
DIP/AZIMUTH: 90°/--

BORE No: BH 03
PROJECT No: 99872.00
DATE: 18/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
35.8	0.04	ASPHALTIC CONCRETE		A/E	0.0				
	0.1	FILL/ROADBASE/Sandy GRAVEL: dark grey, fine igneous gravel, fine to medium sand, moist, generally in a dense condition			0.1				
	0.3	FILL/Sandy CLAY: low to medium plasticity, pale grey and yellow-brown, fine to medium sand, w~PL, generally in a firm condition, reworked natural		A/E	0.4				
					0.5				
	0.7	CLAY CI: medium plasticity, pale grey and red-brown, trace fine sand, w<PL, stiff, residual		S			6,12 refusal		
35	0.9	SANDSTONE: pale grey, low to medium strength, possibly Mittagong Formation or Hawkesbury Sandstone			0.8				
	1	Bore discontinued at 0.9m Auger refusal on inferred medium strength sandstone							1
34	2								2
33	3								3
32	4								4
31									

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Solid Flight Auger (TC-bit) to 0.9m
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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D21/78776

BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 36.7 AHD
EASTING: 321346.4
NORTHING: 6257950.9
DIP/AZIMUTH: 90°/--

BORE No: BH 04
PROJECT No: 99872.00
DATE: 18/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.08	ASPHALTIC CONCRETE		A/E	0.0				
	0.14	FILL/ROADBASE/Sandy GRAVEL: dark grey, fine igneous gravel, fine to medium sand, moist, generally in a dense condition			0.1				
		FILL/CLAY: medium plasticity, grey-brown and orange brown, trace fine to medium sand, w>PL, generally in a soft condition		A/E*	0.4 0.5				
36	0.65	FILL/CLAY: medium plasticity, orange-brown, w~PL, generally in a soft condition, potentially reworked natural		S			0,1,3 N = 4		
	1	At 1.05m: trace glass			0.95				1
	1.5	CLAY CI: medium plasticity, red-brown with some pale grey, with iron indurated bands, w<PL, stiff, residual		S	1.5		3,5,7 N = 12		
35	2				1.95				2
				A/E	2.0 2.1				
34	3								3
	3.0	CLAY CL-CI: low to medium plasticity, pale grey with some orange-brown, w<PL, hard, relict rock structure, extremely weathered shale		S	3.0		5,8,13/80 refusal		
	3.3								
	3.38	SHALE: dark grey, very low to low strength, Ashfield Shale			3.38				
33		Bore discontinued at 3.38m SPT refusal on very low strength shale							4
	4								
32									

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased

TYPE OF BORING: Solid Flight Auger (TC-bit) to 3.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS: *Field replicate BD1/20210118 taken at 0.4-0.5m

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW) **SURFACE LEVEL:** 34.1 AHD **BORE No:** BH 05
PROJECT: Marsden H.S. Repurpose to Netball Facility **EASTING:** 321395.6 **PROJECT No:** 99872.00
LOCATION: Marsden High School, Ryde **NORTHING:** 6257906.1 **DATE:** 18/1/2021
DIP/AZIMUTH: 90°/-- **SHEET** 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
34	0.025	ASPHALTIC CONCRETE		C	0.0				
	0.11	FILL/ROADBASE/Sandy GRAVEL: fine to medium, dark grey, igneous, cemented road base			0.11				
		FILL/CLAY: medium plasticity, dark grey-brown, with fine to medium igneous gravel, w~PL, generally in a firm condition			0.4				
				S	0.5		2,3,2 N = 5		
				A/E	0.9 0.95				
33	1				1.0				1
	1.2	FILL/CLAY: high plasticity, dark grey-brown, w~PL, generally in a very soft condition, reworked natural							
				A/E	1.4	B	Bulk sample 0.4-2.4m		
					1.5				
				S			0,0,0 N = 0		
32	2			A/E	2.0				2
					2.1				
	2.4	CLAY CI-CL: low to medium plasticity, red-brown and pale grey, with some iron indurated bands, w<PL, hard, relict rock texture, extremely weathered shale		A/E*	2.4				
					2.5				
				A/E	2.9				
	3				3.0				3
31	3.1	SHALE: grey and red, very low strength, Ashfield Shale		S			7,13,17 N = 30		
					3.45				
30	4								4
	4.5	SHALE: dark grey, low strength, Ashfield Shale		S	4.5		15/100 refusal		
	4.6	Bore discontinued at 4.6m SPT refusal on low strength shale			4.6				

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Diacore to 0.11m; Solid Flight Auger (TC-bit) to 4.5m
WATER OBSERVATIONS: No free groundwater observed
REMARKS: *Field replicate BD4/20210118 taken at 2.4-2.5m

SAMPLING & IN SITU TESTING LEGEND

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

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Geotechnics / Environment / Groundwater

D21/78776

BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 33.6 AHD
EASTING: 321407.6
NORTHING: 6257911.3
DIP/AZIMUTH: 90°/--

BORE No: BH 05A
PROJECT No: 99872.00
DATE: 19/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
33	0.3	FILL/TOPSOIL/SILT: low plasticity, brown, with rootlets, w<PL, generally in a firm condition							
		FILL/CLAY: high plasticity, dark grey-brown, w~PL, generally in a very soft condition, reworked natural		B	0.3		Bulk sample 0.3-1.3m		
	1								1
32	1.3	Bore discontinued at 1.3m Target depth reached			1.3				
	2								2
31									
	3								3
30									
	4								4
29									

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Solid Flight Auger (TC-bit) to 1.3m
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 31.9 AHD
EASTING: 321481.1
NORTHING: 6257873.8
DIP/AZIMUTH: 90°/--

BORE No: BH 06
PROJECT No: 99872.00
DATE: 19/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
31	0.1	FILL/TOPSOIL/SILT: low plasticity, dark grey-brown, trace rootlets, w<PL, generally in a firm condition							
	0.3	SANDSTONE: pale grey and yellow, medium strength, possibly Mittagong Formation or Hawkesbury Sandstone							
		Bore discontinued at 0.3m Auger refusal on inferred medium strength sandstone							
30	1								
29	2								
28	3								
27	4								

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Solid Flight Auger (TC-bit) to 0.3m
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

D21/78776

BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 30.5 AHD
EASTING: 321567.2
NORTHING: 6257893.2
DIP/AZIMUTH: 90°/--

BORE No: BH 07
PROJECT No: 99872.00
DATE: 19/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
30	0.0	FILL/CLAY: medium plasticity, red-brown, with silt, trace rootlets, w<PL, generally in a firm condition, reworked natural		A/E	0.0–0.1				
				A/E	0.4–0.5				
				S	0.5–0.95		4,2,2 N = 4		
	1			A/E	1.0–1.1				1
29		Below 1.5m: trace ash, generally in a very stiff condition		A/E	1.4–1.5				
				S	1.5–1.95		10,10,13 N = 23		
	2			A/E	2.0–2.1				2
28	2.4	FILL/CLAY: medium to high plasticity, pale grey, yellow-brown and red-brown, w<PL, generally in a firm condition, reworked natural		A/E	2.4–2.5				
	2.7	CLAY CH: high plasticity, dark grey, trace rootlets, w<PL, stiff, alluvial		A/E	2.9–3.0				
	3			S	3.0–3.45		6,8,9 N = 17		3
27				A/E*	3.5–3.6			▼ 19-01-21	
	4								4
26		Below 4.5m: very soft		S	4.5		0,0,1/140 refusal		
	4.9								
	4.94	SANDSTONE: pale grey, low strength			4.94				
	5	Bore discontinued at 4.94m SPT refusal on low strength sandstone							5

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased

TYPE OF BORING: Solid Flight Auger (TC-bit) to 4.9m

WATER OBSERVATIONS: Groundwater level observed as 3.70m after the hole had been left open for 6 hours

REMARKS: *Field replicate BD5/20210119 taken at 3.5-3.6m

SAMPLING & IN SITU TESTING LEGEND

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

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D21/78776

BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 28.7 AHD
EASTING: 321531
NORTHING: 6258004.8
DIP/AZIMUTH: 90°/--

BORE No: BH 08
PROJECT No: 99872.00
DATE: 19/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.1	FILL/Silty SAND: fine to medium sand, brown, with medium igneous gravel, trace rootlets, dry, generally in a loose condition		A/E	0.0–0.1				
		FILL/CLAY: medium plasticity, brown, with silt, w<PL, generally in a firm condition		A/E	0.4–0.5				
28				S			4,2,4 N = 6		
	1				0.95				1
				A/E	1.0–1.1				
	1.2	FILL/CLAY: medium plasticity, orange-brown, trace fine ironstone gravel, w<PL, generally in a very stiff condition		A/E	1.4–1.5				
27				S			10,10,13 N = 23		
	2				1.95				2
				A/E*	2.0–2.1				
		Below 2.4m: trace fine igneous gravel		A/E	2.4–2.5				
26									
	3			A/E	2.9				3
	3.0	CLAY CI-CH: medium to high plasticity, pale grey with some orange-brown, trace fine to medium ironstone gravel, w<PL, very stiff, residual		S	3.0		6,8,9 N = 17		
	3.5				3.45				
	3.6	Sandy CLAY CL-CI: low to medium plasticity, pale grey, fine to medium, w<PL, residual		A	3.6				
25	3.7	SANDSTONE: pale grey, low to medium strength, possibly Mittagong Formation or Hawkesbury Sandstone			3.7				
		Bore discontinued at 3.7m Auger refusal on inferred medium to high strength sandstone							
	4								4
24									

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Solid Flight Auger (TC-bit) to 3.7m
WATER OBSERVATIONS: No free groundwater observed
REMARKS: *Field replicate BD10/20210119 taken at 2.0-2.1m

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 41.7 AHD
EASTING: 321507.4
NORTHING: 6258097
DIP/AZIMUTH: 90°/--

BORE No: BH 09
PROJECT No: 99872.00
DATE: 19/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
41	0.0	FILL/SILT: low plasticity, dark brown, trace rootlets and sandstone gravel, w<PL, generally in a firm condition		A/E	0.0 - 0.1				
	0.3	CLAY CI-CH: medium to high plasticity, red-brown, trace rootlets, w<PL, apparently very stiff, residual		A/E	0.4 - 0.5				
				A/E*	0.9				
40	1.0	Bore discontinued at 1.0m Target depth reached			1.0				
39	2								2
38	3								3
37	4								4

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Solid Flight Auger (TC-bit) to 1.0m
WATER OBSERVATIONS: No free groundwater observed
REMARKS: *Field replicate BD8/20210119 taken at 0.9-1.0m

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 32.7 AHD
EASTING: 321444.4
NORTHING: 6258059.9
DIP/AZIMUTH: 90°/--

BORE No: BH 10
PROJECT No: 99872.00
DATE: 19/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
32.7	0.0								
		FILL/TOPSOIL/Silty CLAY: medium plasticity, brown, trace rootlets, w<PL, generally in a firm condition		A/E	0.0 - 0.1				
32.5	0.2	CLAY CI-CH: medium to high plasticity, red-brown, w<PL, apparently stiff, residual		A/E	0.4 - 0.5				
				A/E	0.9 - 1.0				
				A/E	1.4 - 1.5				
31.2	1.5	Bore discontinued at 1.5m Target depth reached							

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Solid Flight Auger (TC-bit) to 1.5m
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 39.1 AHD
EASTING: 321316.3
NORTHING: 6257984.5
DIP/AZIMUTH: 90°/--

BORE No: BH 11
PROJECT No: 99872.00
DATE: 18/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
39	0.02	ASPHALTIC CONCRETE		A/E	0.0				
	0.2	FILL/ROADBASE/Sandy GRAVEL: dark grey, fine igneous gravel, fine to medium sand, moist, generally in a dense condition			0.1				
		FILL/CLAY: medium plasticity, dark grey-brown, trace fine to medium sand, w~PL, generally in a firm condition		A/E*	0.4 0.5				
	0.6	FILL/CLAY: medium to high plasticity, grey and yellow-brown, w~PL, generally in a firm condition, possibly natural							
38	1			A/E	0.9 1.0				1
	1.2	CLAY CI-CH: medium to high plasticity, pale grey mottled yellow-brown, w<PL, apparently stiff, residual							
				A/E	1.4 1.5				
		Below 1.8m: apparently very stiff							
	2 2.0			A/E	1.9 2.0				2
37		Bore discontinued at 2.0m Target depth reached							
	3								3
36									
	4								4
35									

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Solid Flight Auger (TC-bit) to 2.0m
WATER OBSERVATIONS: No free groundwater observed
REMARKS: *Field replicate BD2/20210118 taken at 0.4-0.5m

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 37.1 AHD
EASTING: 321510.8
NORTHING: 6258058.3
DIP/AZIMUTH: 90°/--

BORE No: BH 12
PROJECT No: 99872.00
DATE: 19/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
37	0.0	FILL/CLAY: low to medium plasticity, brown, with fine to coarse igneous gravel in the upper 0.3m, w<PL, generally in a firm condition		A/E	0.0 - 0.1				
				A/E	0.4 - 0.5				
				A/E	0.9 - 1.0				
36	1			A/E	1.4 - 1.5				1
	1.8	CLAY CI-CH: medium to high plasticity, red-brown, trace fine to medium sand and ironstone gravel, w<PL, apparently firm, residual		A/E	1.9 - 2.0				
35	2			A/E	2.4 - 2.5				2
	2.5	Bore discontinued at 2.5m Target depth reached							
34	3								3
33	4								4

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Solid Flight Auger (TC-bit) to 2.5m
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 33 AHD
EASTING: 321436.9
NORTHING: 6257995.6
DIP/AZIMUTH: 90°/--

BORE No: BH 13
PROJECT No: 99872.00
DATE: 19/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
33	0.0								
	0.15	FILL/TOPSOIL/Sandy CLAY: low plasticity, grey, fine to medium, w<PL, generally in a firm condition		A/E	0.1				
		FILL/CLAY: medium plasticity, dark grey and red, w<PL, generally in a very stiff condition, possibly reworked natural		A/E	0.4 0.5				
32	1			A/E	0.9 1.0				1
	1.2	CLAY CH: high plasticity, dark grey mottled red, w<PL, apparently stiff, residual		A/E	1.4				
	1.5	Bore discontinued at 1.5m Target depth reached			1.5				
31	2								2
30	3								3
29	4								4

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Solid Flight Auger (TC-bit) to 1.5m
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 37.6 AHD
EASTING: 321318.5
NORTHING: 6257937.7
DIP/AZIMUTH: 90°/--

BORE No: BH 14
PROJECT No: 99872.00
DATE: 18/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
37	0.08	ASPHALTIC CONCRETE		A/E	0.0				
	0.25	FILL/Sandy GRAVEL: dark grey, fine igneous gravel, fine to medium sand, moist, generally in a dense condition			0.1				
		CLAY CI-CH: medium to high plasticity, red-brown with some pale grey, w<PL, apparently stiff, residual		A/E	0.4				
					0.5				
				A/E	0.9				
36	1.0	Bore discontinued at 1.0m Target depth reached			1.0				
35									
34									
33									

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Solid Flight Auger (TC-bit) to 1.0m
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 34 AHD
EASTING: 321404
NORTHING: 6257950.1
DIP/AZIMUTH: 90°/--

BORE No: BH 15
PROJECT No: 99872.00
DATE: 18/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
34	0.0	FILL/TOPSOIL/SILT: low plasticity, brown, trace fine to medium sand and rootlets, w<PL, generally in a firm condition		A/E	0.0				
	0.2	CLAY CH: high plasticity, yellow-brown, w<PL, apparently firm, residual			0.1				
				A/E	0.4				
					0.5				
		Below 0.8m: apparently stiff							
				A/E	0.9				
33	1.0	Bore discontinued at 1.0m Target depth reached			1.0				
32	2								
31	3								
30	4								

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Solid Flight Auger (TC-bit) to 1.5m
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 32.8 AHD
EASTING: 321466.1
NORTHING: 6257976.5
DIP/AZIMUTH: 90°/--

BORE No: BH 16
PROJECT No: 99872.00
DATE: 19/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
32	0.0	FILL/TOPSOIL/Silty CLAY: medium plasticity, brown, trace rootlets and fine to medium gravel, w<PL, generally in a loose condition		A/E	0.0 - 0.1				
	0.3	FILL/CLAY: medium plasticity, red-brown and brown, w<PL, generally in a firm condition, reworked natural		A/E	0.4 - 0.5				
	1			A/E	0.9 - 1.0				1
				A/E	1.4 - 1.5				
31	2			A/E	1.9 - 2.0				2
	2.1	CLAY CI-CH: medium to high plasticity, grey with some orange, w<PL, apparently stiff, residual		A/E	2.4 - 2.5				
	2.5	Bore discontinued at 2.5m Target depth reached							
30	3								3
29	4								4
28									

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Solid Flight Auger (TC-bit) to 2.5m
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 32.4 AHD
EASTING: 321444.8
NORTHING: 6257939.6
DIP/AZIMUTH: 90°/--

BORE No: BH 17
PROJECT No: 99872.00
DATE: 18/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
32	0.0	FILL/Clayey SILT: low to medium plasticity, brown, trace rootlets, w<PL, generally in a firm condition		A/E	0.0–0.1				
				A/E*	0.4–0.5				
				A/E	0.9–1.0				
31	1.2	CLAY CI-CH: medium to high plasticity, red-brown, w<PL, apparently stiff, residual		A/E	1.4–1.5				
				A/E	1.9–2.0				
30	2.0	Bore discontinued at 2.0m Target depth reached							
29									
28									

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Solid Flight Auger (TC-bit) to 1.5m
WATER OBSERVATIONS: No free groundwater observed
REMARKS: *Field replicate BD3/20210118 taken at 0.4-0.5m

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 31.6 AHD
EASTING: 321501.8
NORTHING: 6257953.1
DIP/AZIMUTH: 90°/--

BORE No: BH 18
PROJECT No: 99872.00
DATE: 19/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
31	0.1	FILL/TOPSOIL/Silty CLAY: medium plasticity, brown, trace rootlets, w<PL, generally in a firm condition		A/E	0.0 0.1				
		CLAY CH: high plasticity, red brown with some grey, w<PL, apparently stiff, residual		A/E*	0.4 0.5				
				A/E	0.9				
30	1.0	Bore discontinued at 1.0m Target depth reached			1.0				
29									
28									
27									

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Solid Flight Auger (TC-bit) to 1.0m
WATER OBSERVATIONS: No free groundwater observed
REMARKS: *Field replicate BD7/20210119 taken at 0.4-0.5m

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 39.4 AHD
EASTING: 321338.3
NORTHING: 6257898.1
DIP/AZIMUTH: 90°/--

BORE No: BH 19
PROJECT No: 99872.00
DATE: 18/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.074	CONCRETE: with 5mm diameter steel reinforcement at 0.07m depth		C	0.0 0.07				
39		FILL/CLAY: medium plasticity, grey-brown, trace sand, rootlets and bricks to -0.15m, w<PL, generally in a firm condition		A/E	0.4 0.5				
	1	Below 1.0m: trace medium sandstone gravel		A/E	0.9 1.0				1
38				A/E	1.4 1.5				
	1.6	CLAY CI-CH: medium to high plasticity, red-brown, w<PL, apparently stiff, residual		A/E	1.9 2.0				
	2								2
37				A/E	2.4 2.5				
	2.5	Bore discontinued at 2.5m Target depth reached							
	3								3
36									
	4								4
35									

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased

TYPE OF BORING: Diacore to 0.074m, Solid Flight Auger (TC-bit) to 2.5m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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D21/78776

BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 31.4 AHD
EASTING: 321492.2
NORTHING: 6257919.5
DIP/AZIMUTH: 90°/--

BORE No: BH 20
PROJECT No: 99872.00
DATE: 19/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
31	0.0	FILL/Silty CLAY: medium plasticity, dark brown, w<PL, generally in a firm condition		A/E	0.0 - 0.1				
				A/E	0.4 - 0.5				
	0.5	FILL/CLAY: medium plasticity, red-brown, w<PL, generally in a stiff condition, possibly natural		A/E	0.9 - 1.0				
30	1			A/E	1.4 - 1.5				
	2			A/E	1.9 - 2.0				
29	2.2	CLAY CI-CH: medium to high plasticity, grey mottled red-brown, w<PL, apparently very stiff, residual		A/E	2.4 - 2.5				
	2.5	Bore discontinued at 2.5m Target depth reached							
28	3								
27	4								

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Solid Flight Auger (TC-bit) to 2.5m
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 29.7 AHD
EASTING: 321558
NORTHING: 6257943.8
DIP/AZIMUTH: 90°/--

BORE No: BH 21
PROJECT No: 99872.00
DATE: 19/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
29	0.2	FILL/TOPSOIL/Silty CLAY: low to medium plasticity, brown, trace rootlets, w<PL, generally in a firm condition		A/E	0.0–0.1				
		CLAY CI-CH: medium to high plasticity, red-brown mottled grey, w<PL, apparently stiff, residual		A/E	0.4–0.5				
	1			A/E	0.9–1.0				1
	1.1	Bore discontinued at 1.1m Target depth reached							
28	2								2
27	3								3
26	4								4
25									

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Solid Flight Auger (TC-bit) to 1.1m
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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D21/78776

BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 33.4 AHD
EASTING: 321443.8
NORTHING: 6257902.1
DIP/AZIMUTH: 90°/--

BORE No: BH 22
PROJECT No: 99872.00
DATE: 18/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
33	0.0	FILL/Clayey SILT: brown, trace rootlets and fine sand, w<PL, generally in a firm condition		A/E	0.0–0.1				
				A/E	0.4–0.5				
	0.8	CLAY CI-CH: medium to high plasticity, red-brown, w<PL, apparently stiff, residual		A/E	0.9–1.0				
32	1			A/E	1.4–1.5				1
	1.5	Bore discontinued at 1.5m Target depth reached							
31	2								2
30	3								3
29	4								4

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Solid Flight Auger (TC-bit) to 1.5m
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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D21/78776

BOREHOLE LOG

CLIENT: School Infrastructure New South Wales (SINSW)
PROJECT: Marsden H.S. Repurpose to Netball Facility
LOCATION: Marsden High School, Ryde

SURFACE LEVEL: 30.9 AHD
EASTING: 321531.1
NORTHING: 6257901.3
DIP/AZIMUTH: 90°/--

BORE No: BH 23
PROJECT No: 99872.00
DATE: 19/1/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
30	0.0	FILL/Sandy SILT: low plasticity, grey-brown, fine to medium sand, trace fine to medium shale gravel, w<PL, generally in a firm condition		A/E	0.0 - 0.1				
				A/E	0.4 - 0.5				
	0.7	SANDSTONE: pale yellow-grey, inferred low strength							
	0.8	Bore discontinued at 0.8m Target depth reached							
29	1								
28	2								
27	3								
26	4								

RIG: Hanjin D13-8 **DRILLER:** Geosense **LOGGED:** TM **CASING:** Uncased
TYPE OF BORING: Solid Flight Auger (TC-bit) to 0.8m
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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Sampling Methods

Sampling

Sampling is carried out during drilling or test pitting to allow engineering examination (and laboratory testing where required) of the soil or rock.

Disturbed samples taken during drilling provide information on colour, type, inclusions and, depending upon the degree of disturbance, some information on strength and structure.

Undisturbed samples are taken by pushing a thin-walled sample tube into the soil and withdrawing it to obtain a sample of the soil in a relatively undisturbed state. Such samples yield information on structure and strength, and are necessary for laboratory determination of shear strength and compressibility. Undisturbed sampling is generally effective only in cohesive soils.

Test Pits

Test pits are usually excavated with a backhoe or an excavator, allowing close examination of the in-situ soil if it is safe to enter into the pit. The depth of excavation is limited to about 3 m for a backhoe and up to 6 m for a large excavator. A potential disadvantage of this investigation method is the larger area of disturbance to the site.

Large Diameter Augers

Boreholes can be drilled using a rotating plate or short spiral auger, generally 300 mm or larger in diameter commonly mounted on a standard piling rig. The cuttings are returned to the surface at intervals (generally not more than 0.5 m) and are disturbed but usually unchanged in moisture content. Identification of soil strata is generally much more reliable than with continuous spiral flight augers, and is usually supplemented by occasional undisturbed tube samples.

Continuous Spiral Flight Augers

The borehole is advanced using 90-115 mm diameter continuous spiral flight augers which are withdrawn at intervals to allow sampling or in-situ testing. This is a relatively economical means of drilling in clays and sands above the water table. Samples are returned to the surface, or may be collected after withdrawal of the auger flights, but they are disturbed and may be mixed with soils from the sides of the hole. Information from the drilling (as distinct from specific sampling by SPTs or undisturbed samples) is of relatively low reliability, due to the remoulding, possible mixing or softening of samples by groundwater.

Non-core Rotary Drilling

The borehole is advanced using a rotary bit, with water or drilling mud being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be determined from the cuttings, together with some information from the rate of penetration. Where drilling mud is used this can mask the cuttings and reliable identification is only possible from separate sampling such as SPTs.

Continuous Core Drilling

A continuous core sample can be obtained using a diamond tipped core barrel, usually with a 50 mm internal diameter. Provided full core recovery is achieved (which is not always possible in weak rocks and granular soils), this technique provides a very reliable method of investigation.

Standard Penetration Tests

Standard penetration tests (SPT) are used as a means of estimating the density or strength of soils and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289, Methods of Testing Soils for Engineering Purposes - Test 6.3.1.

The test is carried out in a borehole by driving a 50 mm diameter split sample tube under the impact of a 63 kg hammer with a free fall of 760 mm. It is normal for the tube to be driven in three successive 150 mm increments and the 'N' value is taken as the number of blows for the last 300 mm. In dense sands, very hard clays or weak rock, the full 450 mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form.

- In the case where full penetration is obtained with successive blow counts for each 150 mm of, say, 4, 6 and 7 as:

  4,6,7
  N=13

- In the case where the test is discontinued before the full penetration depth, say after 15 blows for the first 150 mm and 30 blows for the next 40 mm as:

  15, 30/40 mm

Sampling Methods

The results of the SPT tests can be related empirically to the engineering properties of the soils.

Dynamic Cone Penetrometer Tests / Perth Sand Penetrometer Tests

Dynamic penetrometer tests (DCP or PSP) are carried out by driving a steel rod into the ground using a standard weight of hammer falling a specified distance. As the rod penetrates the soil the number of blows required to penetrate each successive 150 mm depth are recorded. Normally there is a depth limitation of 1.2 m, but this may be extended in certain conditions by the use of extension rods. Two types of penetrometer are commonly used.

- Perth sand penetrometer - a 16 mm diameter flat ended rod is driven using a 9 kg hammer dropping 600 mm (AS 1289, Test 6.3.3). This test was developed for testing the density of sands and is mainly used in granular soils and filling.
- Cone penetrometer - a 16 mm diameter rod with a 20 mm diameter cone end is driven using a 9 kg hammer dropping 510 mm (AS 1289, Test 6.3.2). This test was developed initially for pavement subgrade investigations, and correlations of the test results with California Bearing Ratio have been published by various road authorities.

Soil Descriptions

Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are generally based on Australian Standard AS1726:2017, Geotechnical Site Investigations. In general, the descriptions include strength or density, colour, structure, soil or rock type and inclusions.

Soil Types

Soil types are described according to the predominant particle size, qualified by the grading of other particles present:

Type	Particle size (mm)
Boulder	>200
Cobble	63 - 200
Gravel	2.36 - 63
Sand	0.075 - 2.36
Silt	0.002 - 0.075
Clay	<0.002

The sand and gravel sizes can be further subdivided as follows:

Type	Particle size (mm)
Coarse gravel	19 - 63
Medium gravel	6.7 - 19
Fine gravel	2.36 – 6.7
Coarse sand	0.6 - 2.36
Medium sand	0.21 - 0.6
Fine sand	0.075 - 0.21

Definitions of grading terms used are:

- Well graded - a good representation of all particle sizes
- Poorly graded - an excess or deficiency of particular sizes within the specified range
- Uniformly graded - an excess of a particular particle size
- Gap graded - a deficiency of a particular particle size with the range

The proportions of secondary constituents of soils are described as follows:

In fine grained soils (>35% fines)

Term	Proportion of sand or gravel	Example
And	Specify	Clay (60%) and Sand (40%)
Adjective	>30%	Sandy Clay
With	15 – 30%	Clay with sand
Trace	0 - 15%	Clay with trace sand

In coarse grained soils (>65% coarse)
- with clays or silts

Term	Proportion of fines	Example
And	Specify	Sand (70%) and Clay (30%)
Adjective	>12%	Clayey Sand
With	5 - 12%	Sand with clay
Trace	0 - 5%	Sand with trace clay

In coarse grained soils (>65% coarse)
- with coarser fraction

Term	Proportion of coarser fraction	Example
And	Specify	Sand (60%) and Gravel (40%)
Adjective	>30%	Gravelly Sand
With	15 - 30%	Sand with gravel
Trace	0 - 15%	Sand with trace gravel

The presence of cobbles and boulders shall be specifically noted by beginning the description with 'Mix of Soil and Cobbles/Boulders' with the word order indicating the dominant first and the proportion of cobbles and boulders described together.

Soil Descriptions

Cohesive Soils

Cohesive soils, such as clays, are classified on the basis of undrained shear strength. The strength may be measured by laboratory testing, or estimated by field tests or engineering examination. The strength terms are defined as follows:

Description	Abbreviation	Undrained shear strength (kPa)
Very soft	VS	<12
Soft	S	12 - 25
Firm	F	25 - 50
Stiff	St	50 - 100
Very stiff	VSt	100 - 200
Hard	H	>200
Friable	Fr	-

Cohesionless Soils

Cohesionless soils, such as clean sands, are classified on the basis of relative density, generally from the results of standard penetration tests (SPT), cone penetration tests (CPT) or dynamic penetrometers (PSP). The relative density terms are given below:

Relative Density	Abbreviation	Density Index (%)
Very loose	VL	<15
Loose	L	15-35
Medium dense	MD	35-65
Dense	D	65-85
Very dense	VD	>85

Soil Origin

It is often difficult to accurately determine the origin of a soil. Soils can generally be classified as:

- Residual soil - derived from in-situ weathering of the underlying rock;
- Extremely weathered material – formed from in-situ weathering of geological formations. Has soil strength but retains the structure or fabric of the parent rock;
- Alluvial soil – deposited by streams and rivers;
- Estuarine soil – deposited in coastal estuaries;
- Marine soil – deposited in a marine environment;
- Lacustrine soil – deposited in freshwater lakes;
- Aeolian soil – carried and deposited by wind;
- Colluvial soil – soil and rock debris transported down slopes by gravity;
- Topsoil – mantle of surface soil, often with high levels of organic material.
- Fill – any material which has been moved by man.

Moisture Condition – Coarse Grained Soils

For coarse grained soils the moisture condition should be described by appearance and feel using the following terms:

- Dry (D) — Non-cohesive and free-running.
- Moist (M) — Soil feels cool, darkened in colour.
  Soil tends to stick together.
  Sand forms weak ball but breaks easily.
- Wet (W) — Soil feels cool, darkened in colour.
  Soil tends to stick together, free water forms when handling.

Moisture Condition – Fine Grained Soils

For fine grained soils the assessment of moisture content is relative to their plastic limit or liquid limit, as follows:

- 'Moist, dry of plastic limit' or 'w <PL' (i.e. hard and friable or powdery).
- 'Moist, near plastic limit' or 'w ≈ PL (i.e. soil can be moulded at moisture content approximately equal to the plastic limit).
- 'Moist, wet of plastic limit' or 'w >PL' (i.e. soils usually weakened and free water forms on the hands when handling).
- 'Wet' or 'w ≈LL' (i.e. near the liquid limit).
- 'Wet' or 'w >LL' (i.e. wet of the liquid limit).

Rock Descriptions

Rock Strength

Rock strength is defined by the Unconfined Compressive Strength and it refers to the strength of the rock substance and not the strength of the overall rock mass, which may be considerably weaker due to defects.

The Point Load Strength Index $Is_{(50)}$ is commonly used to provide an estimate of the rock strength and site specific correlations should be developed to allow UCS values to be determined. The point load strength test procedure is described by Australian Standard AS4133.4.1-2007. The terms used to describe rock strength are as follows:

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

* Assumes a ratio of 20:1 for UCS to $Is_{(50)}$. It should be noted that the UCS to $Is_{(50)}$ ratio varies significantly for different rock types and specific ratios should be determined for each site.

Degree of Weathering

The degree of weathering of rock is classified as follows:

Term	Abbreviation	Description
Residual Soil	RS	Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are no longer visible, but the soil has not been significantly transported.
Extremely weathered	XW	Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are still visible
Highly weathered	HW	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable. Rock strength is significantly changed by weathering. Some primary minerals have weathered to clay minerals. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores.
Moderately weathered	MW	The whole of the rock material is discoloured , usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable, but shows little or no change of strength from fresh rock.
Slightly weathered	SW	Rock is partially discoloured with staining or bleaching along joints but shows little or no change of strength from fresh rock.
Fresh	FR	No signs of decomposition or staining.
Note: If HW and MW cannot be differentiated use DW (see below)		
Distinctly weathered	DW	Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching or may be decreased due to deposition of weathered products in pores.

Rock Descriptions

Degree of Fracturing

The following classification applies to the spacing of natural fractures in diamond drill cores. It includes bedding plane partings, joints and other defects, but excludes drilling breaks.

Term	Description
Fragmented	Fragments of <20 mm
Highly Fractured	Core lengths of 20-40 mm with occasional fragments
Fractured	Core lengths of 30-100 mm with occasional shorter and longer sections
Slightly Fractured	Core lengths of 300 mm or longer with occasional sections of 100-300 mm
Unbroken	Core contains very few fractures

Rock Quality Designation

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

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

where 'sound' rock is assessed to be rock of low strength or stronger. The RQD applies only to natural fractures. If the core is broken by drilling or handling (i.e. drilling breaks) then the broken pieces are fitted back together and are not included in the calculation of RQD.

Stratification Spacing

For sedimentary rocks the following terms may be used to describe the spacing of bedding partings:

Term	Separation of Stratification Planes
Thinly laminated	< 6 mm
Laminated	6 mm to 20 mm
Very thinly bedded	20 mm to 60 mm
Thinly bedded	60 mm to 0.2 m
Medium bedded	0.2 m to 0.6 m
Thickly bedded	0.6 m to 2 m
Very thickly bedded	> 2 m

Symbols & Abbreviations

Introduction

These notes summarise abbreviations commonly used on borehole logs and test pit reports.

Drilling or Excavation Methods

C	Core drilling
R	Rotary drilling
SFA	Spiral flight augers
NMLC	Diamond core - 52 mm dia
NQ	Diamond core - 47 mm dia
HQ	Diamond core - 63 mm dia
PQ	Diamond core - 81 mm dia

Water

▷	Water seep
▽	Water level

Sampling and Testing

A	Auger sample
B	Bulk sample
D	Disturbed sample
E	Environmental sample
U_{50}	Undisturbed tube sample (50mm)
W	Water sample
pp	Pocket penetrometer (kPa)
PID	Photo ionisation detector
PL	Point load strength Is(50) MPa
S	Standard Penetration Test
V	Shear vane (kPa)

Description of Defects in Rock

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

Defect Type

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

Orientation

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

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

Coating or Infilling Term

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

Coating Descriptor

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

Shape

cu	curved
ir	irregular
pl	planar
st	stepped
un	undulating

Roughness

po	polished
ro	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

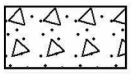
Symbols & Abbreviations

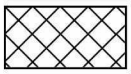
Graphic Symbols for Soil and Rock

General

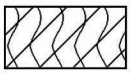

Asphalt

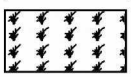

Road base

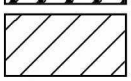

Concrete


Filling

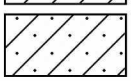
Soils


Topsoil


Peat

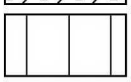

Clay


Silty clay

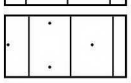

Sandy clay

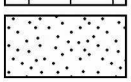

Gravelly clay

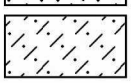

Shaly clay

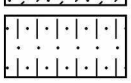

Silt


Clayey silt

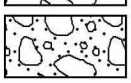

Sandy silt

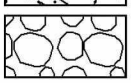

Sand

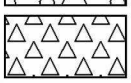

Clayey sand


Silty sand

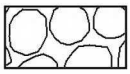

Gravel


Sandy gravel


Cobbles, boulders

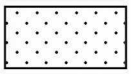

Talus

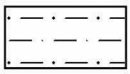
Sedimentary Rocks

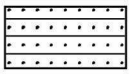

Boulder conglomerate

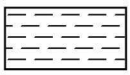

Conglomerate


Conglomeratic sandstone

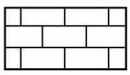

Sandstone


Siltstone

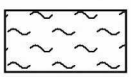

Laminite

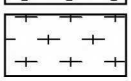

Mudstone, claystone, shale

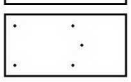

Coal


Limestone

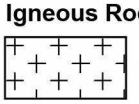
Metamorphic Rocks

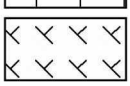

Slate, phyllite, schist

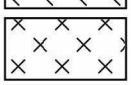

Gneiss

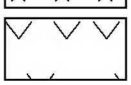

Quartzite

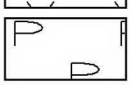
Igneous Rocks


Granite


Dolerite, basalt, andesite


Dacite, epidote


Tuff, breccia


Porphyry

Appendix G

Site Assessment Criteria

Appendix G
Site Assessment Criteria
Marsden High School, West Ryde

G1.0 Introduction

G1.1 Guidelines

The following key guidelines were consulted for deriving the site assessment criteria (SAC):

- NEPC *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM]* (NEPC, 2013).
- CRC CARE *Health screening levels for petroleum hydrocarbons in soil and groundwater* (CRC CARE, 2011).

G1.2 General

The SAC applied in the current investigation are informed by the CSM which identified human and environmental receptors to potential contamination on the site. Analytical results are assessed (as a Tier 1 assessment) against the SAC comprising primarily the investigation and screening levels of Schedule B1 of NEPC (2013).

The following inputs are relevant to the selection and/or derivation of the SAC:

- Land use: recreational.
  - Corresponding to land use category 'C', defined as public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths.
- Land use: commercial / industrial.
  - Corresponding to land use category 'D', defined as commercial / industrial such as shops, offices, factories and industrial sites for vapour intrusion HSL only.
- Soil type: clay.

G2.0 Soils

G2.1 Health Investigation and Screening Levels

The generic health investigation levels (HIL) and health screening levels (HSL) are considered to be appropriate for the assessment of human health risk via all relevant pathways of exposure associated with contamination at the site. The adopted soil HIL and HSL for the contaminants of concern are in Table 1 and Table 2.

Table 1: Health Investigation Levels (mg/kg)

Contaminant	HIL-C
Metals	
Arsenic	300
Cadmium	90
Chromium (VI)	300
Copper	17 000
Lead	600
Mercury (inorganic)	80
Nickel	1200
Zinc	30 000
PAH	
B(a)P TEQ	3
Total PAH	300
Phenols	
Phenol	40 000
Pentachlorophenol	120
OCP	
DDT+DDE+DDD	400
Aldrin and dieldrin	10
Chlordane	70
Endosulfan	340
Endrin	20
Heptachlor	10
HCB	10
Methoxychlor	400
OPP	
Chlorpyrifos	250
PCB	
PCB	1

Table 2: Health Screening Levels (mg/kg)

Contaminant	HSL-D	HSL-D
CLAY	**0 m to <1 m**	**1 m to <2 m**
Benzene	4	6
Toluene	NL	NL
Ethylbenzene	NL	NL
Xylenes	NL	NL
Naphthalene	NL	NL
TRH F1	310	480
TRH F2	NL	NL

Notes: TRH F1 is TRH C_6-C_{10} minus BTEX

TRH F2 is TRH >C_{10}-C_{16} minus naphthalene

The soil saturation concentration (Csat) is defined as the soil concentration at which the porewater phase cannot dissolve any more of an individual chemical. The soil vapour that is in equilibrium with the porewater will be at its maximum. If the derived soil HSL exceeds Csat, a soil vapour source concentration for a petroleum mixture could not exceed a level that would results in the maximum allowable vapour risk for the given scenario. For these scenarios, no HSL is presented for these chemicals and the HSL is shown as 'not limiting' or 'NL'

The HSL for direct contact derived from CRC CARE (2011) are in Table 3.

Table 3: Health Screening Levels for Direct Contact (mg/kg)

Contaminant	DC HSL-C
Benzene	120
Toluene	18 000
Ethylbenzene	5300
Xylenes	15 000
Naphthalene	1900
TRH F1	5100
TRH F2	3800
TRH F3	5300
TRH F4	7400

Notes: TRH F1 is TRH C_6-C_{10} minus BTEX

TRH F2 is TRH >C_{10}-C_{16} minus naphthalene

G2.2 Asbestos in Soil

Based on the CSM and/or current site access limitations, a detailed asbestos assessment was not considered to be warranted at this stage. However, due to the history of widespread use of ACM products across Australia, ACM can be encountered unexpectedly and sporadically at a site. Therefore,

the presence or absence of asbestos at a limit of reporting of 0.1 g/kg (AS:4964) has been adopted for this investigation as an initial screen.

G2.3 Ecological Investigation Levels

Ecological investigation levels (EIL) and added contaminant limits (ACL), where appropriate, have been derived in NEPC (2013) for arsenic, copper, chromium (III), nickel, lead, zinc, DDT and naphthalene. The adopted EIL, derived using the interactive (excel) calculation spreadsheet on the NEPM toolbox website are shown in Table 5, with inputs into their derivation shown in Table 4.

Table 4: Inputs to the Derivation of the Ecological Investigation Levels

Variable	Input	Rationale
Age of contaminants	"Aged" (>2 years)	
pH	5.22	Average pH of measured results from analytical laboratory results.
CEC	5.46 $cmol_c/kg$	Average CEC of measured results from analytical laboratory results.
Clay content	10%	Assumed based on lithology encountered during investigation.
Traffic volumes	High	The site is located in an established residential setting.
State / Territory	NSW	

Table 5: Ecological Investigation Levels (mg/kg)

Contaminant	EIL-A-B-C
Metals	
Arsenic	100
Copper	130
Nickel	45
Chromium III	410
Lead	1100
Zinc	280
PAH	
Naphthalene	170
OCP	
DDT	180

G2.4 Ecological Screening Levels

Ecological screening levels (ESL) are used to assess the risk of selected petroleum hydrocarbon compounds, BTEX and benzo(a)pyrene to terrestrial ecosystems. The adopted ESL are shown in Table 6.

Table 6: Ecological Screening Levels (mg/kg)

Contaminant	Soil Type	EIL-A-B-C
Benzene	Fine	65
Toluene	Fine	105
Ethylbenzene	Fine	125
Xylenes	Fine	45
TRH F1	Coarse/ Fine	180*
TRH F2	Coarse/ Fine	120*
TRH F3	Fine	1300
TRH F4	Fine	5600
B(a)P	Fine	0.7

Notes: ESL are of low reliability except where indicated by * which indicates that the ESL is of moderate reliability
TRH F1 is TRH C_6-C_{10} minus BTEX
TRH F2 is TRH >C_{10}-C_{16} including naphthalene

G2.5 Management Limits

In addition to appropriate consideration and application of the HSL and ESL, there are additional considerations which reflect the nature and properties of petroleum hydrocarbons, including:

- Formation of observable light non-aqueous phase liquids (LNAPL);
- Fire and explosion hazards;
- Effects on buried infrastructure eg: penetration of, or damage to, in-ground services.

The adopted management limits are in Table 7.

Table 7: Management Limits (mg/kg)

Contaminant	Soil Type	ML-A-B-C
TRH F1	Fine	800
TRH F2	Fine	1000
TRH F3	Fine	3500
TRH F4	Fine	10 000

Notes: TRH F1 is TRH C_6-C_{10} including BTEX
TRH F2 is TRH F2 >C_{10}-C_{16} naphthalene

G3.0 References

ANZECC. (2000). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality.* Australia and New Zealand Environment and Conservation Council.

ANZG. (2018). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*. Canberra, ACT: Australian and New Zealand Governments and Australian state and territory governments.

CRC CARE. (2011). *Health screening levels for petroleum hydrocarbons in soil and groundwater*. Parts 1 to 3, Technical Report No. 10: Cooperative Research Centre for Contamination Assessment and Remediation of the Environment.

HEPA. (2020). *PFAS National Environmental Management Plan (NEMP)*. Version 2.0: Heads of EPAs Australia and New Zealand and Australian Government Department of the Environment.

NEPC. (2013). *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM]*. Australian Government Publishing Services Canberra: National Environment Protection Council.

NHMRC. (2008). *Guidelines for Managing Risks In Recreational Water*.

NHMRC, NRMMC. (2016). *Australian Drinking Water Guidelines 6 2011, Version 3.2*. Canberra: National Health and Medical Research Council, National Resource Management Ministerial Council.

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Appendix H

Summary of Laboratory Results

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Table H1: Summary of Laboratory Results – Site Assessment Criteria for Metals, TRH, BTEX and PAH

				Metals								TRH						BTEX				PAH			
				Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	TRH C6 - C10	TRH >C10-C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene [b]	Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ	Total PAHs
			PQL	4	0.4	1	1	1	0.1	1	1	25	50	25	50	100	100	0.2	0.5	1	1	1	0.05	0.5	0.5
Site Assessment Criteria - Recreational Land Use																									
HIL C - Recreational / Open Space				300	90	300	17,000	600	80	1200	30,000													3	300
HSL D - Commercial / Industrial 0- <1m / 1-2m Fine														310 / 480	NL			4 / 6	NL	NL	NL	NL			
EIL/ESL - Urban Residential and Public Open Space Fine				100		410	130	1100		45	280		120	180	120	1,300	5,600	65	105	125	45	170	0.7		
Management Limit - R / P / POS Fine														800	1,000	3,500	10,000								
Direct Contact - HSL C - Recreational / Open Space														5,100	3,800	5,300	7,400	120	18,000	5,300	15,000	1,900			
Laboratory Results																									
Sample ID	Depth	Matrix	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BH1	0 - 0.1 m	FILL	18/01/2021	**6**	<0.4	**14**	**11**	**66**	<0.1	**4**	**33**	<25	**69**	<25	**69**	**160**	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH1	0.4 - 0.5 m	CLAY	18/01/2021	**8**	<0.4	**12**	**8**	**12**	<0.1	**2**	**5**	<25	<50	<25	<50	**100**	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH2	0.4 - 0.5 m	FILL	19/01/2021	**4**	<0.4	**12**	**12**	**16**	<0.1	**7**	**15**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH2	1.4 - 1.5 m	CLAY	19/01/2021	**4**	<0.4	**10**	**9**	**14**	<0.1	**2**	**7**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH3	0 - 0.1 m	FILL	18/01/2021	<4	<0.4	**69**	**49**	**5**	<0.1	**57**	**33**	<25	<50	<25	<50	**870**	**2100**	<0.2	<0.5	<1	<1	<1	**0.07**	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH4	0.4 - 0.5 m	FILL	18/01/2021	**7**	<0.4	**14**	**14**	**16**	<0.1	**5**	**10**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BD1/20210118*	0.4 - 0.5 m	FILL	18/01/2021	**6**	<0.4	**15**	**14**	**14**	<0.1	**6**	**11**	<25	<50	<25	<50	<100	**240**	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH4	2 - 2.1 m	CLAY	18/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 60	30000 190	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH5	1 - 1.1 m	FILL	18/01/2021	**8**	<0.4	**17**	**12**	**22**	<0.1	**7**	**27**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.07**	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH5	2 - 2.1 m	FILL	18/01/2021	**4**	<0.4	**16**	**8**	**17**	<0.1	**4**	**6**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH5	2.9 - 3 m	CLAY	18/01/2021	**10**	<0.4	**21**	**11**	**19**	<0.1	**3**	**10**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH6	0 - 0.1 m	FILL	19/01/2021	**4**	<0.4	**8**	**4**	**19**	<0.1	**3**	**19**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH7	0.4 - 0.5 m	FILL	19/01/2021	**5**	<0.4	**12**	**46**	**38**	<0.1	**5**	**24**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.1**	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH7 - [TRIPLICATE]	0.4 - 0.5 m	FILL	19/01/2021	**5**	<0.4	**14**	**20**	**42**	<0.1	**4**	**26**	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH7	1.4 - 1.5 m	FILL	19/01/2021	**6**	<0.4	**13**	**19**	**39**	<0.1	**7**	**82**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.1**	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC

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Table H1: Summary of Laboratory Results – Site Assessment Criteria for Metals, TRH, BTEX and PAH

				Metals								TRH						BTEX				PAH			
				Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	TRH C6 - C10	TRH >C10-C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene [b]	Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ	Total PAHs
			PQL	4	0.4	1	1	1	0.1	1	1	25	50	25	50	100	100	0.2	0.5	1	1	1	0.05	0.5	0.5
Site Assessment Criteria - Recreational Land Use																									
HIL C - Recreational / Open Space				300	90	300	17,000	600	80	1200	30,000													3	300
HSL D - Commercial / Industrial 0- <1m / 1-2m Fine														310 / 480	NL			4 / 6	NL	NL	NL	NL			
EIL/ESL - Urban Residential and Public Open Space Fine				100		410	130	1100		45	280		120	180	120	1,300	5,600	65	105	125	45	170	0.7		
Management Limit - R / P / POS Fine														800	1,000	3,500	10,000								
Direct Contact - HSL C - Recreational / Open Space														5,100	3,800	5,300	7,400	120	18,000	5,300	15,000	1,900			
Laboratory Results																									
Sample ID	Depth	Matrix	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BH7	2.4 - 2.5 m	FILL	19/01/2021	**6**	<0.4	**20**	**13**	**20**	<0.1	**4**	**11**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH8	0 - 0.1 m	FILL	19/01/2021	<4	<0.4	**11**	**22**	**21**	<0.1	**7**	**41**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.06**	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH8	0.4 - 0.5 m	FILL	19/01/2021	**6**	<0.4	**13**	**23**	**19**	<0.1	**11**	**49**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH8	2 - 2.1 m	FILL	19/01/2021	**10**	<0.4	**8**	**29**	**15**	<0.1	**8**	**47**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH8	3.5 - 3.6 m	CLAY	19/01/2021	<4	<0.4	**7**	**7**	**27**	<0.1	**2**	**12**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BD10/20210119*	3.5 - 3.6 m	CLAY	19/01/2021	**6**	<0.4	**8**	**10**	**20**	<0.1	**2**	**10**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH9	0 - 0.1 m	FILL	19/01/2021	**7**	<0.4	**15**	**38**	**110**	**0.4**	**12**	**220**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH9	0.4 - 0.5 m	CLAY	19/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 60	30000 190	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH10	0 - 0.1 m	FILL	19/01/2021	**5**	<0.4	**12**	**19**	**25**	<0.1	**13**	**39**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH11	0 - 0.1 m	FILL	18/01/2021	<4	<0.4	**68**	**20**	**7**	<0.1	**54**	**32**	<25	<50	<25	<50	**170**	**550**	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH11	0.4 - 0.5 m	FILL	18/01/2021	**8**	<0.4	**23**	**11**	**23**	**0.3**	**4**	**14**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BD2/20210118*	0.4 - 0.5 m	FILL	18/01/2021	**9**	<0.4	**23**	**12**	**22**	<0.1	**5**	**14**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH11	0.9 - 1 m	FILL	18/01/2021	**8**	<0.4	**16**	**11**	**20**	<0.1	**1**	**6**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH12	0.4 - 0.5 m	FILL	19/01/2021	**7**	<0.4	**13**	**14**	**22**	<0.1	**4**	**16**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.1**	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH13	0 - 0.1 m	FILL	19/01/2021	<4	<0.4	**6**	**8**	**15**	<0.1	**3**	**26**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH13	0.9 - 1 m	FILL	19/01/2021	<4	<0.4	**12**	**16**	**15**	<0.1	**7**	**17**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.5
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 45	30000 280	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC
BH13	1.4 - 1.5 m	CLAY	19/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				300 100	90 NC	300 410	17000 130	600 1100	80 NC	1200 60	30000 190	NC NC	NC 120	310 180	NL 120	NC 1300	NC 5600	4 65	NL 105	NL 125	NL 45	NL 170	NC 0.7	3 NC	300 NC

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Table H1: Summary of Laboratory Results – Site Assessment Criteria for Metals, TRH, BTEX and PAH

				Metals								TRH						BTEX				PAH			
				Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	TRH C6 - C10	TRH >C10-C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene [b]	Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ	Total PAHs
			PQL	4	0.4	1	1	1	0.1	1	1	25	50	25	50	100	100	0.2	0.5	1	1	1	0.05	0.5	0.5
Site Assessment Criteria - Recreational Land Use																									
HIL C - Recreational / Open Space				300	90	300	17,000	600	80	1200	30,000													3	300
HSL D - Commercial / Industrial 0- <1m / 1-2m Fine														310 / 480	NL			4 / 6	NL	NL	NL	NL			
EIL/ESL - Urban Residential and Public Open Space Fine				100		410	130	1100		45	280		120	180	120	1,300	5,600	65	105	125	45	170	0.7		
Management Limit - R / P / POS Fine														800	1,000	3,500	10,000								
Direct Contact - HSL C - Recreational / Open Space														5,100	3,800	5,300	7,400	120	18,000	5,300	15,000	1,900			
Laboratory Results																									
Sample ID	Depth	Matrix	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
BH14	0.4 - 0.5 m	CLAY	18/01/2021	**10** 300 100	<0.4 90 NC	**19** 300 410	**11** 17000 130	**17** 600 1100	<0.1 80 NC	**2** 1200 45	**7** 30000 280	<25 NC NC	<50 NC 120	<25 310 180	<50 NL 120	<100 NC 1300	<100 NC 5600	<0.2 4 65	<0.5 NL 105	<1 NL 125	<1 NL 45	<1 NL 170	<0.05 NC 0.7	<0.5 3 NC	<0.5 300 NC
BH15	0 - 0.1 m	FILL	18/01/2021	**12** 300 100	<0.4 90 NC	**8** 300 410	**10** 17000 130	**28** 600 1100	<0.1 80 NC	**4** 1200 45	**33** 30000 280	<25 NC NC	<50 NC 120	<25 310 180	<50 NL 120	<100 NC 1300	<100 NC 5600	<0.2 4 65	<0.5 NL 105	<1 NL 125	<1 NL 45	<1 NL 170	<0.05 NC 0.7	<0.5 3 NC	<0.5 300 NC
BH16	0 - 0.1 m	FILL	19/01/2021	**15** 300 100	<0.4 90 NC	**11** 300 410	**15** 17000 130	**26** 600 1100	<0.1 80 NC	**5** 1200 45	**29** 30000 280	<25 NC NC	<50 NC 120	<25 310 180	<50 NL 120	<100 NC 1300	<100 NC 5600	<0.2 4 65	<0.5 NL 105	<1 NL 125	<1 NL 45	<1 NL 170	<0.05 NC 0.7	<0.5 3 NC	<0.5 300 NC
BH16	0.9 - 1 m	FILL	19/01/2021	NT 300 100	NT 90 NC	NT 300 410	NT 17000 130	NT 600 1100	NT 80 NC	NT 1200 60	NT 30000 190	NT NC NC	NT NC 120	NT 310 180	NT NL 120	NT NC 1300	NT NC 5600	NT 4 65	NT NL 105	NT NL 125	NT NL 45	NT NL 170	NT NC 0.7	NT 3 NC	NT 300 NC
BH17	0.4 - 0.5 m	FILL	19/01/2021	**10** 300 100	<0.4 90 NC	**21** 300 410	**18** 17000 130	**38** 600 1100	**0.1** 80 NC	**8** 1200 45	**41** 30000 280	<25 NC NC	<50 NC 120	<25 310 180	<50 NL 120	<100 NC 1300	<100 NC 5600	<0.2 4 65	<0.5 NL 105	<1 NL 125	<1 NL 45	<1 NL 170	**0.07** NC 0.7	<0.5 3 NC	<0.5 300 NC
BH18	0 - 0.1 m	FILL	19/01/2021	**25** 300 100	<0.4 90 NC	**11** 300 410	**42** 17000 130	**29** 600 1100	<0.1 80 NC	**5** 1200 45	**40** 30000 280	<25 NC NC	<50 NC 120	<25 310 180	<50 NL 120	<100 NC 1300	<100 NC 5600	<0.2 4 65	<0.5 NL 105	<1 NL 125	<1 NL 45	<1 NL 170	<0.05 NC 0.7	<0.5 3 NC	<0.5 300 NC
BH19	0.4 - 0.5 m	FILL	18/01/2021	**7** 300 100	<0.4 90 NC	**20** 300 410	**12** 17000 130	**42** 600 1100	<0.1 80 NC	**5** 1200 45	**22** 30000 280	<25 NC NC	<50 NC 120	<25 310 180	<50 NL 120	<100 NC 1300	<100 NC 5600	<0.2 4 65	<0.5 NL 105	<1 NL 125	<1 NL 45	<1 NL 170	<0.05 NC 0.7	<0.5 3 NC	<0.5 300 NC
BH19	1.4 - 1.5 m	FILL	18/01/2021	NT 300 100	NT 90 NC	NT 300 410	NT 17000 130	NT 600 1100	NT 80 NC	NT 1200 60	NT 30000 190	NT NC NC	NT NC 120	NT 310 180	NT NL 120	NT NC 1300	NT NC 5600	NT 4 65	NT NL 105	NT NL 125	NT NL 45	NT NL 170	NT NC 0.7	NT 3 NC	NT 300 NC
BH20	0 - 0.1 m	FILL	18/01/2021	**7** 300 100	<0.4 90 NC	**17** 300 410	**12** 17000 130	**24** 600 1100	<0.1 80 NC	**7** 1200 45	**35** 30000 280	<25 NC NC	<50 NC 120	<25 310 180	<50 NL 120	<100 NC 1300	<100 NC 5600	<0.2 4 65	<0.5 NL 105	<1 NL 125	<1 NL 45	<1 NL 170	**0.06** NC 0.7	<0.5 3 NC	<0.5 300 NC
BH21	0 - 0.1 m	FILL	19/01/2021	**6** 300 100	<0.4 90 NC	**14** 300 410	**25** 17000 130	**25** 600 1100	<0.1 80 NC	**7** 1200 45	**44** 30000 280	<25 NC NC	<50 NC 120	<25 310 180	<50 NL 120	**100** NC 1300	<100 NC 5600	<0.2 4 65	<0.5 NL 105	<1 NL 125	<1 NL 45	<1 NL 170	<0.05 NC 0.7	<0.5 3 NC	<0.5 300 NC
BD6/20210119*	0 - 0.1 m	FILL	18/01/2021	**6** 300 100	<0.3 90 NC	**13** 300 410	**18** 17000 130	**32** 600 1100	<0.05 80 NC	**7.5** 1200 45	**53** 30000 280	<25 NC NC	<50 NC 120	<25 310 180	<50 NL 120	<90 NC 1300	<120 NC 5600	<0.1 4 65	<0.1 NL 105	<0.1 NL 125	<0.3 NL 45	<0.1 NL 170	<0.1 NC 0.7	<0.2 3 NC	<0.8 300 NC
BH22	0.4 - 0.5 m	FILL	18/01/2021	**6** 300 100	<0.4 90 NC	**17** 300 410	**3** 17000 130	**15** 600 1100	<0.1 80 NC	**2** 1200 45	**16** 30000 280	<25 NC NC	<50 NC 120	<25 310 180	<50 NL 120	<100 NC 1300	<100 NC 5600	<0.2 4 65	<0.5 NL 105	<1 NL 125	<1 NL 45	<1 NL 170	<0.05 NC 0.7	<0.5 3 NC	<0.5 300 NC
BH23	0.4 - 0.5 m	FILL	19/01/2021	**8** 300 100	<0.4 90 NC	**12** 300 410	**17** 17000 130	**24** 600 1100	<0.1 80 NC	**3** 1200 45	**20** 30000 280	<25 NC NC	<50 NC 120	<25 310 180	<50 NL 120	<100 NC 1300	<100 NC 5600	<0.2 4 65	<0.5 NL 105	<1 NL 125	<1 NL 45	<1 NL 170	**0.4** NC 0.7	**0.5** 3 NC	**0.5** 300 NC

Lab result
HIL/HSL value EIL/ESL value

HIL/HSL exceedance | EIL/ESL exceedance | HIL/HSL and EIL/ESL exceedance | ML exceedance | ML and HIL/HSL or EIL/ESL exceedance

Indicates that asbestos has been detected by the lab below the PQL, refer to the lab report **Blue** = DC exceedance

Bold = Lab detections NT = Not tested NL = Non limiting NC = No criteria NA = Not applicable NAD = No asbestos detected at the reporting limit

Notes:

HIL/HSL/DC	NEPC, Schedule B1 - HIL C (undefined), HSL A/B (undefined), DC HSL B (undefined)
EIL/ESL	NEPC, Schedule B1 - EIL UR/POS (undefined), ESL UR/POS (undefined)
ML	NEPC, Schedule B1 - ML R/P/POS (undefined)
a	QA/QC replicate of sample listed directly below the primary sample
b	Reported naphthalene laboratory result obtained from BTEXN suite
c	Ecological criteria applies to DDT only
*	Blind replicates are reported below the primary parent sample

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Table H2: Summary of Laboratory Results – Site Assessment Criteria for Phenol, OCP, OPP, PCB and Asbestos

				Phenol	OCP											OPP	PCB	Asbestos		
				Phenol	DDT+DDE+DDD [c]	DDD	DDE	DDT	Aldrin & Dieldrin	Total Chlordane	Total Endosulfan	Endrin	Heptachlor	Hexachlorobenzene	Methoxychlor	Chlorpyriphos	Total PCB	Asbestos ID in soil >0.1g/kg	Trace Analysis	Asbestos (50 g)
			PQL	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
Site Assessment Criteria - Recreational Land Use																				
HIL C - Recreational / Open Space				120*	400				10	70	340	20	10	10	400	250	1			
HSL D - Commercial / Industrial 0- <1m / 1-2m Fine																		No Asbestos		
EIL/ESL - Urban Residential and Public Open Space Fine					180			180												
Management Limit - R / P / POS Fine																				
Direct Contact - HSL C - Recreational / Open Space																				
Laboratory Results																				
Sample ID	Depth	Matrix	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-	-	-
BH1	0 - 0.1 m	FILL	18/01/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH1	0.4 - 0.5 m	CLAY	18/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH2	0.4 - 0.5 m	FILL	19/01/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH2	1.4 - 1.5 m	CLAY	19/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH3	0 - 0.1 m	FILL	18/01/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH4	0.4 - 0.5 m	FILL	18/01/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BD1/20210118*	0.4 - 0.5 m	FILL	18/01/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NT	NT	NT
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH4	2 - 2.1 m	CLAY	18/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH5	1 - 1.1 m	FILL	18/01/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH5	2 - 2.1 m	FILL	18/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH5	2.9 - 3 m	CLAY	18/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH6	0 - 0.1 m	FILL	19/01/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH7	0.4 - 0.5 m	FILL	19/01/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH7 - [TRIPLICATE]	0.4 - 0.5 m	FILL	19/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH7	1.4 - 1.5 m	FILL	19/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH7	2.4 - 2.5 m	FILL	19/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			

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Table H2: Summary of Laboratory Results – Site Assessment Criteria for Phenol, OCP, OPP, PCB and Asbestos

				Phenol	OCP											OPP	PCB	Asbestos		
				Phenol	DDT+DDE+DDD [c]	DDD	DDE	DDT	Aldrin & Dieldrin	Total Chlordane	Total Endosulfan	Endrin	Heptachlor	Hexachlorobenzene	Methoxychlor	Chlorpyriphos	Total PCB	Asbestos ID in soil >0.1g/kg	Trace Analysis	Asbestos (50 g)
			PQL	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
Site Assessment Criteria - Recreational Land Use																				
HIL C - Recreational / Open Space				120*	400				10	70	340	20	10	10	400	250	1			
HSL D - Commercial / Industrial 0- <1m / 1-2m Fine																		No Asbestos		
EIL/ESL - Urban Residential and Public Open Space Fine					180			180												
Management Limit - R / P / POS Fine																				
Direct Contact - HSL C - Recreational / Open Space																				
Laboratory Results																				
Sample ID	Depth	Matrix	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-	-	-
BH8	0 - 0.1 m	FILL	19/01/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH8	0.4 - 0.5 m	FILL	19/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	NAD
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH8	2 - 2.1 m	FILL	19/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	NAD
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH8	3.5 - 3.6 m	CLAY	19/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BD10/20210119*	3.5 - 3.6 m	CLAY	19/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH9	0 - 0.1 m	FILL	19/01/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH9	0.4 - 0.5 m	CLAY	19/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH10	0 - 0.1 m	FILL	19/01/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH11	0 - 0.1 m	FILL	18/01/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH11	0.4 - 0.5 m	FILL	18/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	NAD
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BD2/20210118*	0.4 - 0.5 m	FILL	18/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH11	0.9 - 1 m	FILL	18/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD	NAD
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH12	0.4 - 0.5 m	FILL	19/01/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH13	0 - 0.1 m	FILL	19/01/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH13	0.9 - 1 m	FILL	19/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH13	1.4 - 1.5 m	CLAY	19/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH14	0.4 - 0.5 m	CLAY	18/01/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			
BH15	0 - 0.1 m	FILL	18/01/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
				120 NC	400 180	NC NC	NC NC	NC 180	10 NC	70 NC	340 NC	20 NC	10 NC	10 NC	400 NC	250 NC	1 NC			

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Table H2: Summary of Laboratory Results – Site Assessment Criteria for Phenol, OCP, OPP, PCB and Asbestos

				Phenol	OCP											OPP	PCB	Asbestos		
				Phenol	DDT+DDE+DDD [c]	DDD	DDE	DDT	Aldrin & Dieldrin	Total Chlordane	Total Endosulfan	Endrin	Heptachlor	Hexachlorobenzene	Methoxychlor	Chlorpyriphos	Total PCB	Asbestos ID in soil >0.1g/kg	Trace Analysis	Asbestos (50 g)
			PQL	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
Site Assessment Criteria - Recreational Land Use																				
HIL C - Recreational / Open Space				120*	400				10	70	340	20	10	10	400	250	1			
HSL D - Commercial / Industrial 0- <1m / 1-2m Fine																		No Asbestos		
EIL/ESL - Urban Residential and Public Open Space Fine					180			180												
Management Limit - R / P / POS Fine																				
Direct Contact - HSL C - Recreational / Open Space																				
Laboratory Results																				
Sample ID	Depth	Matrix	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-	-	-
BH16	0 - 0.1 m	FILL	19/01/2021	<5 120 NC	<0.1 400 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 10 NC	<0.1 70 NC	<0.1 340 NC	<0.1 20 NC	<0.1 10 NC	<0.1 10 NC	<0.1 400 NC	<0.1 250 NC	<0.1 1 NC	NAD	NAD	NAD
BH16	0.9 - 1 m	FILL	19/01/2021	NT 120 NC	NT 400 180	NT NC NC	NT NC NC	NT NC 180	NT 10 NC	NT 70 NC	NT 340 NC	NT 20 NC	NT 10 NC	NT 10 NC	NT 400 NC	NT 250 NC	NT 1 NC	NT	NT	NT
BH17	0.4 - 0.5 m	FILL	19/01/2021	<5 120 NC	<0.1 400 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 10 NC	<0.1 70 NC	<0.1 340 NC	<0.1 20 NC	<0.1 10 NC	<0.1 10 NC	<0.1 400 NC	<0.1 250 NC	<0.1 1 NC	NAD	NAD	NAD
BH18	0 - 0.1 m	FILL	19/01/2021	NT 120 NC	NT 400 180	NT NC NC	NT NC NC	NT NC 180	NT 10 NC	NT 70 NC	NT 340 NC	NT 20 NC	NT 10 NC	NT 10 NC	NT 400 NC	NT 250 NC	NT 1 NC	NAD	NAD	NAD
BH19	0.4 - 0.5 m	FILL	18/01/2021	<5 120 NC	<0.1 400 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 10 NC	<0.1 70 NC	<0.1 340 NC	<0.1 20 NC	<0.1 10 NC	<0.1 10 NC	<0.1 400 NC	<0.1 250 NC	<0.1 1 NC	NAD	NAD	NAD
BH19	1.4 - 1.5 m	FILL	18/01/2021	NT 120 NC	NT 400 180	NT NC NC	NT NC NC	NT NC 180	NT 10 NC	NT 70 NC	NT 340 NC	NT 20 NC	NT 10 NC	NT 10 NC	NT 400 NC	NT 250 NC	NT 1 NC	NT	NT	NT
BH20	0 - 0.1 m	FILL	18/01/2021	<5 120 NC	<0.1 400 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 10 NC	<0.1 70 NC	<0.1 340 NC	<0.1 20 NC	<0.1 10 NC	<0.1 10 NC	<0.1 400 NC	<0.1 250 NC	<0.1 1 NC	NAD	NAD	NAD
BH21	0 - 0.1 m	FILL	19/01/2021	<5 120 NC	<0.1 400 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 10 NC	<0.1 70 NC	<0.1 340 NC	<0.1 20 NC	<0.1 10 NC	<0.1 10 NC	<0.1 400 NC	<0.1 250 NC	<0.1 1 NC	NAD	NAD	NAD
BD6/20210119*	0 - 0.1 m	FILL	19/01/2021	<0.5 120 NC	<0.1 400 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.2 10 NC	<0.1 70 NC	<0.1 340 NC	<0.1 20 NC	<0.1 10 NC	<0.1 10 NC	<0.1 400 NC	<0.2 250 NC	<1 1 NC	NT	NT	NT
BH22	0.4 - 0.5 m	FILL	18/01/2021	NT 120 NC	NT 400 180	NT NC NC	NT NC NC	NT NC 180	NT 10 NC	NT 70 NC	NT 340 NC	NT 20 NC	NT 10 NC	NT 10 NC	NT 400 NC	NT 250 NC	NT 1 NC	NAD	NAD	NAD
BH23	0.4 - 0.5 m	FILL	19/01/2021	NT 120 NC	NT 400 180	NT NC NC	NT NC NC	NT NC 180	NT 10 NC	NT 70 NC	NT 340 NC	NT 20 NC	NT 10 NC	NT 10 NC	NT 400 NC	NT 250 NC	NT 1 NC	NAD	NAD	NAD

Lab result
HIL/HSL value EIL/ESL value

HIL/HSL exceedance | EIL/ESL exceedance | HIL/HSL and EIL/ESL exceedance | ML exceedance | ML and HIL/HSL or EIL/ESL exceedance

Indicates that asbestos has been detected by the lab below the PQL, refer to the lab report **Blue** = DC exceedance

Bold = Lab detections NT = Not tested NL = Non limiting NC = No criteria NA = Not applicable NAD = No asbestos detected at the reporting limit

Notes:

HIL/HSL/DC	NEPC, Schedule B1 - HIL C (undefined), HSL A/B (undefined), DC HSL B (undefined)
EIL/ESL	NEPC, Schedule B1 - EIL UR/POS (undefined), ESL UR/POS (undefined)
ML	NEPC, Schedule B1 - ML R/P/POS (undefined)
a	QA/QC replicate of sample listed directly below the primary sample
b	Reported naphthalene laboratory result obtained from BTEXN suite
c	Ecological criteria applies to DDT only
*	Blind replicates are reported below the primary parent sample

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Table H3: Summary of Laboratory Results – Metals, TRH, BTEX, PAH, Phenol, OCP, OPP, PCB and Asbestos

				Metals										TRH		BTEX											
				Arsenic	Cadmium	Total Chromium	Copper	Lead	TCLP Lead	Mercury (inorganic)	Nickel	TCLP Nickel	Zinc	TRH C6 - C9	C10-C36 recoverable hydrocarbons	Benzene	Toluene	Ethylbenzene	m+p-Xylene	o-Xylene	Xylenes (total)	Benzo(a)pyrene (BaP)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b,j+k)fluoranthene
			PQL	4	0.4	1	1	1	0.03	0.1	1	0.02	1	25	50	0.2	0.5	1	2	1	3	0.05	0.1	0.1	0.1	0.1	0.2
Sample ID	Depth	Soil Matrix	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/l	mg/kg	mg/kg	mg/l	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Waste Classification Criteria																											
CT1				100	20	100	NC	100	N/A	4	40	N/A	NC	650	10000	10	288	600	NC	NC	1000	0.8	NC	NC	NC	NC	NC
SCC1				500	100	1900	NC	1500	N/A	50	1050	N/A	NC	650	10000	18	518	1080	NC	NC	1800	10	NC	NC	NC	NC	NC
TCLP1				N/A	N/A	N/A	NC	N/A	5	N/A	N/A	2	NC	N/A	N/A	N/A	N/A	N/A	NC	NC	N/A	N/A	NC	NC	NC	NC	NC
CT2				400	80	400	NC	400	N/A	16	160	N/A	NC	2600	40000	40	1152	2400	NC	NC	4000	3.2	NC	NC	NC	NC	NC
SCC2				2000	400	7600	NC	6000	N/A	200	4200	N/A	NC	2600	40000	72	2073	4320	NC	NC	7200	23	NC	NC	NC	NC	NC
TCLP2				N/A	N/A	N/A	NC	N/A	20	N/A	N/A	8	NC	N/A	N/A	N/A	N/A	N/A	NC	NC	N/A	N/A	NC	NC	NC	NC	NC
Published Background Values																											
ANZECC (1992)^				0.2-30	0.04-2	0.5-110	1-190	<2-200	-	0.001-0.1	2-400	-	2-180	-	-	0.05 - 1	0.1 - 1	-	-	-	-	-	-	-	-	-	-
ANZECC (2000)				1-53	0.016-0.78	2.5-673	0.4-412	2-81	-	-	1-517	-	1-263	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laboratory Results																											
BH1	0 - 0.1 m	FILL	18/01/2021	6	<0.4	14	11	66	-	<0.1	4	-	33	<25	193	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH1	0.4 - 0.5 m	CLAY	18/01/2021	8	<0.4	12	8	12	-	<0.1	2	-	5	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH2	0.4 - 0.5 m	FILL	19/01/2021	4	<0.4	12	12	16	-	<0.1	7	-	15	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH2	1.4 - 1.5 m	CLAY	19/01/2021	4	<0.4	10	9	14	-	<0.1	2	-	7	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH3	0 - 0.1 m	FILL	18/01/2021	<4	<0.4	69	49	5	-	<0.1	57	0.02	33	<25	920	<0.2	<0.5	<1	<2	<1	<3	0.07	<0.1	<0.1	<0.1	<0.1	<0.2
BH4	0.4 - 0.5 m	FILL	18/01/2021	7	<0.4	14	14	16	NT	<0.1	5	NT	10	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BD1/20210118*	0.4 - 0.5 m	FILL	18/01/2021	6	<0.4	15	14	14	NT	<0.1	6	NT	11	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH5	1 - 1.1 m	FILL	18/01/2021	8	<0.4	17	12	22	-	<0.1	7	-	27	<25	<50	<0.2	<0.5	<1	<2	<1	<3	0.07	<0.1	<0.1	<0.1	<0.1	<0.2
BH5	2 - 2.1 m	FILL	18/01/2021	4	<0.4	16	8	17	-	<0.1	4	-	6	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH5	2.9 - 3 m	CLAY	18/01/2021	10	<0.4	21	11	19	-	<0.1	3	-	10	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH6	0 - 0.1 m	FILL	19/01/2021	4	<0.4	8	4	19	-	<0.1	3	-	19	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH7	0.4 - 0.5 m	FILL	19/01/2021	5	<0.4	12	46	38	NT	<0.1	5	NT	24	<25	<50	<0.2	<0.5	<1	<2	<1	<3	0.1	<0.1	<0.1	<0.1	0.1	0.2
BH7 - [TRIPLICATE]	0.4 - 0.5 m	FILL	19/01/2021	5	<0.4	14	20	42	NT	<0.1	4	NT	26	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH7	1.4 - 1.5 m	FILL	19/01/2021	6	<0.4	13	19	39	-	<0.1	7	-	82	<25	<50	<0.2	<0.5	<1	<2	<1	<3	0.1	<0.1	<0.1	<0.1	0.1	0.2
BH7	2.4 - 2.5 m	FILL	19/01/2021	6	<0.4	20	13	20	-	<0.1	4	-	11	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH8	0 - 0.1 m	FILL	19/01/2021	<4	<0.4	11	22	21	-	<0.1	7	-	41	<25	<50	<0.2	<0.5	<1	<2	<1	<3	0.06	<0.1	<0.1	<0.1	<0.1	<0.2
BH8	0.4 - 0.5 m	FILL	19/01/2021	6	<0.4	13	23	19	-	<0.1	11	-	49	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH8	2 - 2.1 m	FILL	19/01/2021	10	<0.4	8	29	15	-	<0.1	8	-	47	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH8	3.5 - 3.6 m	SANDY CLAY	19/01/2021	<4	<0.4	7	7	27	NT	<0.1	2	NT	12	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BD10/20210119*	3.5 - 3.6 m	SANDY CLAY	19/01/2021	6	<0.4	8	10	20	NT	<0.1	2	NT	10	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH9	0 - 0.1 m	FILL	19/01/2021	7	<0.4	15	38	110	<0.03	0.4	12	-	220	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH10	0 - 0.1 m	FILL	19/01/2021	5	<0.4	12	19	25	-	<0.1	13	-	39	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH11	0 - 0.1 m	FILL	18/01/2021	<4	<0.4	68	20	7	-	<0.1	54	<0.02	32	<25	120	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH11	0.4 - 0.5 m	FILL	18/01/2021	8	<0.4	23	11	23	NT	0.3	4	NT	14	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BD2/20210118*	0.4 - 0.5 m	FILL	18/01/2021	9	<0.4	23	12	22	NT	<0.1	5	NT	14	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH11	0.9 - 1 m	FILL (possible natural)	18/01/2021	8	<0.4	16	11	20	-	<0.1	1	-	6	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH12	0.4 - 0.5 m	FILL	19/01/2021	7	<0.4	13	14	22	-	<0.1	4	-	16	<25	<50	<0.2	<0.5	<1	<2	<1	<3	0.1	<0.1	<0.1	<0.1	0.1	<0.2
BH13	0 - 0.1 m	FILL	19/01/2021	<4	<0.4	6	8	15	-	<0.1	3	-	26	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH13	0.9 - 1 m	FILL	19/01/2021	<4	<0.4	12	16	15	-	<0.1	7	-	17	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH14	0.4 - 0.5 m	CLAY	18/01/2021	10	<0.4	19	11	17	-	<0.1	2	-	7	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH15	0 - 0.1 m	FILL	18/01/2021	12	<0.4	8	10	28	-	<0.1	4	-	33	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH16	0 - 0.1 m	FILL	19/01/2021	15	<0.4	11	15	26	-	<0.1	5	-	29	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH17	0.4 - 0.5 m	FILL	19/01/2021	10	<0.4	21	18	38	-	0.1	8	-	41	<25	<50	<0.2	<0.5	<1	<2	<1	<3	0.07	<0.1	<0.1	<0.1	<0.1	<0.2
BH18	0 - 0.1 m	FILL	19/01/2021	25	<0.4	11	42	29	-	<0.1	5	-	40	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH19	0.4 - 0.5 m	FILL	18/01/2021	7	<0.4	20	12	42	-	<0.1	5	-	22	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH20	0 - 0.1 m	FILL	18/01/2021	7	<0.4	17	12	24	-	<0.1	7	-	35	<25	<50	<0.2	<0.5	<1	<2	<1	<3	0.06	<0.1	<0.1	<0.1	<0.1	<0.2
BH21	0 - 0.1 m	FILL	19/01/2021	6	<0.4	14	25	25	-	<0.1	7	-	44	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BD6/20211019*	0 - 0.1 m	FILL	19/01/2021	6	<0.3	13	18	32	-	<0.05	7.5	-	53	<25	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH22	0.4 - 0.5 m	FILL	18/01/2021	6	<0.4	17	3	15	-	<0.1	2	-	16	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2
BH23	0.4 - 0.5 m	FILL	19/01/2021	8	<0.4	12	17	24	-	<0.1	3	-	20	<25	<50	<0.2	<0.5	<1	<2	<1	<3	0.4	0.1	<0.1	0.3	0.5	0.6

CT1 exceedance TCLP1 and/or SCC1 exceedance CT2 exceedance TCLP2 and/or SCC2 exceedance Asbestos detection

NT = Not tested NL = Non limiting NC = No criteria NA = Not applicable

Notes:

a	QA/QC replicate of sample listed directly below the primary sample
b	Total chromium used as initial screen for chromium(VI).
c	Total recoverable hydrocarbons (TRH) used as an initial screen for total petroleum hydrocarbons (TPH)
d	Criteria for scheduled chemicals used as an initial screen
e	Criteria for Chlorpyrifos used as initial screen
f	All criteria are in the same units as the reported results
*	Blind replicate samples are reported beneath the primary parent sample
PQL	Practical quantitation limit
CT1	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values of specific contaminant concentration (SCC) for classification without TCLP: General solid waste
SCC1	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: General solid waste
TCLP1	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: General solid waste
CT2	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values of specific contaminant concentration (SCC) for classification without TCLP: Restricted solid waste
SCC2	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: Restricted solid waste
TCLP2	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: Restricted solid waste

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Table H3: Summary of Laboratory Results – Metals, TRH, BTEX, PAH, Phenol, OCP, OPP, PCB and Asbestos

			PAH										Phenol	OCP		OPP	PCB	Asbestos		
				Benzo(g,h,i)perylene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs	Phenol	Total Endosulfan	Total Analysed OCP	Total Analysed OPP	Total PCB	Asbestos ID in soil >0.1g/kg	Trace Analysis	Total Asbestos
			PQL	0.1	0.1	0.1	0.1	0.1	0.1	1	0.1	0.1	0.05	5	0.1	0.1	0.1	0.1			
Sample ID	Depth	Soil Matrix	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-	-	-
Waste Classification Criteria																					
CT1				NC	NC	NC	NC	NC	NC	NC	NC	NC	200	288	60	<50	4	<50	NC	NC	NC
SCC1				NC	NC	NC	NC	NC	NC	NC	NC	NC	200	518	108	<50	7.5	<50	NC	NC	NC
TCLP1				NC	NC	NC	NC	NC	NC	NC	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	NC	NC	NC
CT2				NC	NC	NC	NC	NC	NC	NC	NC	NC	800	1152	240	<50	16	<50	NC	NC	NC
SCC2				NC	NC	NC	NC	NC	NC	NC	NC	NC	800	2073	432	<50	30	<50	NC	NC	NC
TCLP2				NC	NC	NC	NC	NC	NC	NC	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	NC	NC	NC
Published Background Values																					
ANZECC (1992)^				-	-	-	-	-	-	-	-	-	0.95-5	0.03 – 0.5	<0.001 - <0.97	-	-	0.02 – 0.1	NIL	NIL	NIL
ANZECC (2000)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Laboratory Results																					
BH1	0 - 0.1 m	FILL	18/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH1	0.4 - 0.5 m	CLAY	18/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-
BH2	0.4 - 0.5 m	FILL	19/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH2	1.4 - 1.5 m	CLAY	19/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-
BH3	0 - 0.1 m	FILL	18/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	**0.1**	**0.1**	**0.3**	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH4	0.4 - 0.5 m	FILL	18/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BD1/20210118*	0.4 - 0.5 m	FILL	18/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	<5	<0.1	<0.1	<0.1	<0.1	-	-	-
BH5	1 - 1.1 m	FILL	18/01/2021	<0.1	<0.1	<0.1	**0.2**	<0.1	<0.1	<1	<0.1	**0.1**	**0.3**	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH5	2 - 2.1 m	FILL	18/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	NAD	NAD
BH5	2.9 - 3 m	CLAY	18/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-
BH6	0 - 0.1 m	FILL	19/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH7	0.4 - 0.5 m	FILL	19/01/2021	<0.1	**0.1**	<0.1	**0.2**	<0.1	<0.1	<1	<0.1	**0.2**	**0.93**	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH7 - [TRIPLICATE]	0.4 - 0.5 m	FILL	19/01/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	-	-	-
BH7	1.4 - 1.5 m	FILL	19/01/2021	<0.1	**0.1**	<0.1	**0.2**	<0.1	<0.1	<1	**0.1**	**0.2**	**1.2**	-	-	-	-	-	NAD	NAD	NAD
BH7	2.4 - 2.5 m	FILL	19/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-
BH8	0 - 0.1 m	FILL	19/01/2021	<0.1	<0.1	<0.1	**0.1**	<0.1	<0.1	<1	<0.1	**0.1**	**0.3**	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH8	0.4 - 0.5 m	FILL	19/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	NAD	NAD
BH8	2 - 2.1 m	FILL	19/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	NAD	NAD
BH8	3.5 - 3.6 m	SANDY CLAY	19/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	NT	NT	NT	NT	NT	-	-	-
BD10/20210119*	3.5 - 3.6 m	SANDY CLAY	19/01/2021	<0.1	<0.1	<0.1	**0.1**	<0.1	<0.1	<1	**0.1**	<0.1	**0.2**	NT	NT	NT	NT	NT	-	-	-
BH9	0 - 0.1 m	FILL	19/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH10	0 - 0.1 m	FILL	19/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH11	0 - 0.1 m	FILL	18/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	**0.1**	<0.1	**0.1**	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH11	0.4 - 0.5 m	FILL	18/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	NT	NT	NT	NT	NT	NAD	NAD	NAD
BD2/20210118*	0.4 - 0.5 m	FILL	18/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	NT	NT	NT	NT	NT	-	-	-
BH11	0.9 - 1 m	FILL (possible natural)	18/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	NAD	NAD
BH12	0.4 - 0.5 m	FILL	19/01/2021	<0.1	<0.1	<0.1	**0.2**	<0.1	<0.1	<1	**0.1**	**0.2**	**0.76**	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH13	0 - 0.1 m	FILL	19/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH13	0.9 - 1 m	FILL	19/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-
BH14	0.4 - 0.5 m	CLAY	18/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH15	0 - 0.1 m	FILL	18/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH16	0 - 0.1 m	FILL	19/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH17	0.4 - 0.5 m	FILL	19/01/2021	<0.1	<0.1	<0.1	**0.1**	<0.1	<0.1	<1	<0.1	<0.1	**0.2**	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH18	0 - 0.1 m	FILL	19/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	NAD	NAD
BH19	0.4 - 0.5 m	FILL	18/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH20	0 - 0.1 m	FILL	18/01/2021	<0.1	<0.1	<0.1	**0.1**	<0.1	<0.1	<1	<0.1	**0.1**	**0.3**	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BH21	0 - 0.1 m	FILL	19/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD
BD6/20211019*	0 - 0.1 m	FILL	19/01/2021	<0.1	<0.1	<0.1	**0.1**	<0.1	<0.1	<0.1	<0.1	**0.1**	<0.8	<5	<0.1	<0.1	<0.1	NT	-	-	-
BH22	0.4 - 0.5 m	FILL	18/01/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	NAD	NAD
BH23	0.4 - 0.5 m	FILL	19/01/2021	**0.2**	**0.4**	<0.1	**1.2**	<0.1	**0.2**	<1	**1**	**1**	**6**	-	-	-	-	-	NAD	NAD	NAD

Notes:

a	QA/QC replicate of sample listed directly below the primary sample
b	Total chromium used as initial screen for chromium(VI).
c	Total recoverable hydrocarbons (TRH) used as an initial screen for total petroleum hydrocarbons (TPH)
d	Criteria for scheduled chemicals used as an initial screen
e	Criteria for Chlorpyrifos used as initial screen
f	All criteria are in the same units as the reported results
*	Blind replicate samples are reported beneath the primary parent sample
PQL	Practical quantitation limit
CT1	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values of specific contaminant concentration (SCC) for classification without TCLP: General solid waste
SCC1	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: General solid waste
TCLP1	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: General solid waste
CT2	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values of specific contaminant concentration (SCC) for classification without TCLP: Restricted solid waste
SCC2	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: Restricted solid waste
TCLP2	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: Restricted solid waste

Table H4: Population Statistics for Nickel Concentrations

	1	
	Count	Nickel
1	1	4
2	2	2
3	3	7
4	4	2
5	5	57
6	6	5
7	7	6
8	8	7
9	9	4
10	10	3
11	11	3
12	12	5
13	13	4
14	14	7
15	15	4
16	16	7
17	17	11
18	18	8
19	19	2
20	20	2
21	21	12
22	22	13
23	23	54
24	24	4
25	25	5
26	26	1
27	27	4
28	28	3
29	29	7
30	30	2
31	31	4
32	32	5
33	33	8
34	34	5
35	35	5
36	36	7
37	37	7
38	38	7.5
39	39	2
40	40	3

1	UCL Statistics for Uncensored Full Data Sets										
2											
3	User Selected Options										
4	Date/Time of Computation	ProUCL 5.19/2/2021 11:18:53 AM									
5	From File	WorkSheet.xls									
6	Full Precision	OFF									
7	Confidence Coefficient	95%									
8	Number of Bootstrap Operations	2000									
9											
10											
11	Nickel										
12											
13	General Statistics										
14	Total Number of Observations	40					Number of Distinct Observations	14			
15							Number of Missing Observations	0			
16	Minimum	1					Mean	7.713			
17	Maximum	57					Median	5			
18	SD	11.44					Std. Error of Mean	1.809			
19	Coefficient of Variation	1.484					Skewness	3.907			
20											
21	Normal GOF Test										
22	Shapiro Wilk Test Statistic	0.446					Shapiro Wilk GOF Test				
23	5% Shapiro Wilk Critical Value	0.94					Data Not Normal at 5% Significance Level				
24	Lilliefors Test Statistic	0.365					Lilliefors GOF Test				
25	5% Lilliefors Critical Value	0.139					Data Not Normal at 5% Significance Level				
26	Data Not Normal at 5% Significance Level										
27											
28	Assuming Normal Distribution										
29	95% Normal UCL						95% UCLs (Adjusted for Skewness)				
30	95% Student's-t UCL	10.76					95% Adjusted-CLT UCL (Chen-1995)	11.88			
31							95% Modified-t UCL (Johnson-1978)	10.95			
32											
33	Gamma GOF Test										
34	A-D Test Statistic	2.938					Anderson-Darling Gamma GOF Test				
35	5% A-D Critical Value	0.77					Data Not Gamma Distributed at 5% Significance Level				
36	K-S Test Statistic	0.244					Kolmogorov-Smirnov Gamma GOF Test				
37	5% K-S Critical Value	0.143					Data Not Gamma Distributed at 5% Significance Level				
38	Data Not Gamma Distributed at 5% Significance Level										
39											
40	Gamma Statistics										
41	k hat (MLE)	1.337					k star (bias corrected MLE)	1.254			
42	Theta hat (MLE)	5.767					Theta star (bias corrected MLE)	6.152			
43	nu hat (MLE)	107					nu star (bias corrected)	100.3			
44	MLE Mean (bias corrected)	7.713					MLE Sd (bias corrected)	6.888			
45							Approximate Chi Square Value (0.05)	78.19			
46	Adjusted Level of Significance	0.044					Adjusted Chi Square Value	77.46			
47											
48	Assuming Gamma Distribution										
49	95% Approximate Gamma UCL (use when n>=50))	9.893					95% Adjusted Gamma UCL (use when n<50)	9.986			
50											
51	Lognormal GOF Test										
52	Shapiro Wilk Test Statistic	0.903					Shapiro Wilk Lognormal GOF Test				
53	5% Shapiro Wilk Critical Value	0.94					Data Not Lognormal at 5% Significance Level				

54				Lilliefors Test Statistic	0.157	Lilliefors Lognormal GOF Test					
55				5% Lilliefors Critical Value	0.139	Data Not Lognormal at 5% Significance Level					
56				Data Not Lognormal at 5% Significance Level							
57											
58				Lognormal Statistics							
59				Minimum of Logged Data	0			Mean of logged Data	1.625		
60				Maximum of Logged Data	4.043			SD of logged Data	0.79		
61											
62				Assuming Lognormal Distribution							
63				95% H-UCL	9.136			90% Chebyshev (MVUE) UCL	9.722		
64				95% Chebyshev (MVUE) UCL	11.02			97.5% Chebyshev (MVUE) UCL	12.81		
65				99% Chebyshev (MVUE) UCL	16.34						
66											
67				Nonparametric Distribution Free UCL Statistics							
68				Data do not follow a Discernible Distribution (0.05)							
69											
70				Nonparametric Distribution Free UCLs							
71				95% CLT UCL	10.69			95% Jackknife UCL	10.76		
72				95% Standard Bootstrap UCL	10.57			95% Bootstrap-t UCL	18.19		
73				95% Hall's Bootstrap UCL	26.98			95% Percentile Bootstrap UCL	10.8		
74				95% BCA Bootstrap UCL	12.41						
75				90% Chebyshev(Mean, Sd) UCL	13.14			95% Chebyshev(Mean, Sd) UCL	15.6		
76				97.5% Chebyshev(Mean, Sd) UCL	19.01			99% Chebyshev(Mean, Sd) UCL	25.71		
77											
78				Suggested UCL to Use							
79				95% Chebyshev (Mean, Sd) UCL	15.6						
80											
81				Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
82				Recommendations are based upon data size, data distribution, and skewness.							
83				These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).							
84				However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.							
85											

Appendix I

Quality Analysis and Quality Controls

Appendix I
Quality Analysis and Quality Controls
Marsden High School, Ryde

I1.0 Field and Laboratory Data Quality Assurance and Quality Control

The field and laboratory data quality assurance and quality control (QA/QC) procedures and results are summarised in the following Table 1. Reference should be made to the field work methodology and the laboratory results / certificates of analysis for further details. The relative percentage difference (RPD) results, along with the other filed QC samples are included at the end of this appendix.

Table 1: Field and Laboratory Quality Control

Item	Evaluation / Acceptance Criteria	Compliance
Analytical laboratories used	NATA accreditation	C
Holding times	Various based on type of analysis	C
Intra-laboratory replicates	5% of primary samples; <30% RPD	C*
Inter-laboratory replicates	5% of primary samples; <30% RPD	PC*
Trip Spikes	1 per sampling event; 60-140% recovery	PC**
Trip Blanks	1 per sampling event; <PQL	PC**
Laboratory / Reagent Blanks	1 per batch; <PQL	C
Matrix Spikes	1 per lab batch; 70-130% recovery (inorganics); 60-140% recovery (organics)	C
Surrogate Spikes	All organics analysis; 70-130% recovery (inorganics); 60-140% recovery (organics)	C
Control Samples	1 per lab batch; 70-130% recovery (inorganics); 60-140% recovery (organics)	C
Standard Operating Procedures (SOP)	Adopting SOP for all aspects of the sampling field work	C

Notes:

C = compliance; PC = partial compliance; NC = non-compliance

* Inter-laboratory replicates were 3% of primary samples. However, there was 13% laboratory replicates in total. See comments below.

** See comments below

The RPD results were all within the acceptable range, with the exception of those indicated in Table QA1. The exceedances are not, however, considered to be of concern given that:

- The number of replicate pairs being collected from fill soils which by its nature is heterogeneous;
- Replicates, rather than homogenised duplicates, were used to minimise risk of volatile loss, hence greater variability can be expected;
- Most of the recorded concentrations being relatively close to the PQL;
- The majority of RPDs within a replicate pair being within the acceptable limits; and
- All other QA/QC parameters met the DQIs.

One trip spike and one trip blank were taken into the field and submitted with the samples to the laboratory. As the trip blank concentrations were all <PQL and the trip spike recovery was within the acceptance criteria of 60 – 140% recovery (see Table QA2 and QA3 respectively), a partial compliance was observed. However, given the results it was considered that appropriate sample storage, handling and transportation was achieved and this partial compliance is unlikely to affect data quality.

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

I2.0 Data Quality Indicators

The reliability of field procedures and analytical results was assessed against the following data quality indicators (DQIs) as outlined in NEPC *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM]* (NEPC, 2013):

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

Table 2: Data Quality Indicators

Data Quality Indicator	Method(s) of Achievement
Completeness	Systematic and selected target locations sampled.
	Preparation of borehole logs, sample location plan and chain of custody records.
	Laboratory sample receipt information received confirming receipt of samples intact and appropriateness of the chain of custody.
	Samples analysed for contaminants of potential concern (COPC) identified in the Conceptual Site Model (CSM).
	Completion of chain of custody (COC) documentation.
	NATA accredited laboratory results certificates provided by the laboratory.
	Satisfactory frequency and results for field and laboratory quality control (QC) samples as discussed in Section 1.
Comparability	Using appropriate techniques for sample recovery, storage and transportation, which were the same for the duration of the project.
	Experienced sampler(s) used.
	Use of NATA registered laboratories, with test methods the same or similar between laboratories.
	Satisfactory results for field and laboratory QC samples.
Representativeness	Target media sampled.
	Sample numbers recovered and analysed are considered to be representative of the target media and complying with DQOs.
	Samples were extracted and analysed within holding times.
	Samples were analysed in accordance with the COC.
Precision	Field staff followed standard operating procedures.
	Acceptable RPD between original samples and replicates.
	Satisfactory results for all other field and laboratory QC samples.
Accuracy	Field staff followed standard operating procedures.
	Satisfactory results for all field and laboratory QC samples.

Based on the above, it is considered that the DQIs have been generally complied with.

I3.0 Conclusion

Based on the results of the field QA and field and laboratory QC, and evaluation against the DQIs it is concluded that the field and laboratory test data obtained are reliable and useable for this assessment.

I4.0 References

NEPC. (2013). *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM].* Australian Government Publishing Services Canberra: National Environment Protection Council.

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Table QA1: Relative Percentage Difference Results – Intra-laboratory and Inter-laboratory Replicates

				Metals								TRH						BTEX				PAH			Phenol	OCP								
				Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	TRH C6 - C10	TRH >C10-C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene [b]	Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ	Phenol	DDT+DDE+DDD [c]	DDD	DDE	DDT	Aldrin & Dieldrin	Total Chlordane	Total Endosulfan	Endrin	Heptachlor
Laboratory	Sample ID	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
ELS	BD1/20210118	0.4 - 0.5 m	18/01/2021	6	<0.4	15	14	14	<0.1	6	11	<25	<50	<25	<50	<100	240	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
ELS	BH4	0.4 - 0.5 m	18/01/2021	7	<0.4	14	14	16	<0.1	5	10	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			Difference	1	0	1	0	2	0	1	1	0	0	0	0	0	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			RPD	15%	0%	7%	0%	13%	0%	18%	10%	0%	0%	0%	0%	0%	**82%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ELS	BD10/20210119	3.5 - 3.6 m	19/01/2021	6	<0.4	8	10	20	<0.1	2	10	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ELS	BH8	3.5 - 3.6 m	19/01/2021	<4	<0.4	7	7	27	<0.1	2	12	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
			Difference	2	0	1	3	7	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-
			RPD	**40%**	0%	13%	**35%**	30%	0%	0%	18%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-	-	-	-	-	-	-	-	-	-
ELS	BD2/20210118	0.4 - 0.5 m	18/01/2021	9	<0.4	23	12	22	<0.1	5	14	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ELS	BH11	0.4 - 0.5 m	18/01/2021	8	<0.4	23	11	23	0.3	4	14	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
			Difference	1	0	0	1	1	0.2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-
			RPD	12%	0%	0%	9%	4%	**100%**	22%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-	-	-	-	-	-	-	-	-	-
ELS	BD6/20210119	0-0.1 m	19/01/2021	6	<0.3	13	18	32	<0.05	7.5	53	<25	<50	<25	<50	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SGS	BH21	0-0.1 m	19/01/2021	6	<0.4	14	25	25	<0.1	7	44	<25	<50	<25	<50	100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
			Difference	0	0	1	7	7	0	0.5	8	0	0	0	0	10	0	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-
			RPD	0%	0%	7%	**32%**	24%	0%	7%	18%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-	-	-	-	-	-	-	-	-

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		OPP	PCB	Asbestos			Complete PAH suite												TRH		Complete OCP suite										Complete OPP suite			
Hexachlorobenzene	Methoxychlor	Chlorpyriphos	Total PCB	Asbestos ID in soil >0.1g/kg	Trace Analysis	Asbestos (50 g)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(g,h,i)perylene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	TRH C6 - C9	C10-C36 recoverable hydrocarbons	alpha-BHC	beta-BHC	Bromophos-ethyl	Chlorpyriphos-methyl	delta-BHC	Diazinon	Dimethoate	Endrin Aldehyde	Lindane	Heptachlor Epoxide	Azinphos methyl (Guthion)	Ethion	Fenitrothion	Ronnel (fenchlorphos)
mg/kg	mg/kg	mg/kg	mg/kg	-	-	-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
<0.1	<0.1	<0.1	<0.1	NT	NT	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
0	0	0	0	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0%	0%	0%	0%	-	-	-	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%
NT	NT	NT	NT	NT	NT	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.1	<0.1	<25	<50	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
NT	NT	NT	NT	NT	NT	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
-	-	-	-	-	-	-	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%	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NT	NT	NT	NT	NT	NT	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
NT	NT	NT	NT	NAD	NAD	NAD	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
-	-	-	-	-	-	-	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%	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NT	NT	NT	NT	NT	NT	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
NT	NT	NT	NT	NAD	NAD	NAD	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
-	-	-	-	-	-	-	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%	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Geotechnics / Environment / Groundwater

Table QA2: Trip Blank Results - Soils (mg/kg)

Sample ID	Benzene	Toluene	Ethylbenzene	m+p-Xylene	o-Xylene
Trip Blank	<0.2	<0.5	<1	<2	<1

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Table QA3: Trip Spike Results – Soils (% Recovery)

Sample ID	Benzene	Toluene	Ethylbenzene	m+p-Xylene	o-Xylene
Trip Spike	99	98	98	99	98

Appendix J

Laboratory Certificates of Analysis

Chain of Custody Documentation

Sample Receipt Advice

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 260039

Client Details

Client	Douglas Partners Pty Ltd
Attention	Lisa Teng
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**99872.01, Marsden High School West Ryde**
Number of Samples	45 soil
Date samples received	21/01/2021
Date completed instructions received	21/01/2021

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	29/01/2021
Date of Issue	29/01/2021

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

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Lucy Zhu, Asbestos Supervisor
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Steven Luong, Organics Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

Client Reference: 99872.01, Marsden High School West Ryde

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		260039-1	260039-2	260039-3	260039-4	260039-5
Your Reference	UNITS	BH1	BH1	BH2	BH3	BH4
Depth		0-0.1	0.4-0.5	0.4-0.5	0-0.1	0.4-0.5
Date Sampled		18/01/2021	18/01/2021	19/01/2021	18/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Date analysed	-	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	115	112	103	117	110

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		260039-7	260039-8	260039-9	260039-10	260039-11
Your Reference	UNITS	BH5	BH5	BH5	BH6	BH7
Depth		1-1.1	2-2.1	2.9-3.	0-0.1	0.4-0.5
Date Sampled		18/01/2021	18/01/2021	18/01/2021	19/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Date analysed	-	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021
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	%	108	116	102	114	102

Client Reference: 99872.01, Marsden High School West Ryde

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		260039-12	260039-13	260039-14	260039-15	260039-16
Your Reference	UNITS	BH7	BH7	BH8	BH8	BH8
Depth		1.4-1.5	2.4-2.5	0-0.1	0.4-0.5	2-2.1
Date Sampled		19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Date analysed	-	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021
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	%	108	115	98	112	111

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		260039-17	260039-18	260039-20	260039-21	260039-22
Your Reference	UNITS	BH8	BH9	BH10	BH11	BH11
Depth		3.5-3.6	0-0.1	0-0.1	0-0.1	0.4-0.5
Date Sampled		19/01/2021	19/01/2021	19/01/2021	18/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Date analysed	-	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021
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	%	110	111	114	108	105

Client Reference: 99872.01, Marsden High School West Ryde

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		260039-23	260039-24	260039-25	260039-26	260039-28
Your Reference	UNITS	BH11	BH12	BH13	BH13	BH14
Depth		0.9-1.0	0.4-0.5	0-0.1	0.9-1.0	0.4-0.5
Date Sampled		18/01/2021	19/01/2021	19/01/2021	19/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Date analysed	-	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021
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	%	100	103	106	108	107

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		260039-29	260039-30	260039-32	260039-33	260039-34
Your Reference	UNITS	BH15	BH16	BH17	BH18	BH19
Depth		0-0.1	0-0.1	0.4-0.5	0-0.1	0.4-0.5
Date Sampled		18/01/2021	19/01/2021	19/01/2021	19/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Date analysed	-	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021
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	%	103	103	101	96	102

Client Reference: 99872.01, Marsden High School West Ryde

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		260039-36	260039-37	260039-38	260039-39	260039-40
Your Reference	UNITS	BH20	BH21	BH22	BH23	BD1/20210118
Depth		0-0.1	0-0.1	0.4-0.5	0.4-0.5	-
Date Sampled		18/01/2021	19/01/2021	18/01/2021	19/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Date analysed	-	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021
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	%	101	93	103	100	105

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		260039-41	260039-42	260039-43	260039-44	260039-45
Your Reference	UNITS	BD10/20210119	BD2/20210118	Trip Spike	Trip Blank	BH2
Depth		-	-	-	-	1.4-1.5
Date Sampled		19/01/2021	18/01/2021	18/01/2021	18/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Date analysed	-	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021
TRH C_6 - C_9	mg/kg	<25	<25	[NA]	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	[NA]	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	[NA]	<25	<25
Benzene	mg/kg	<0.2	<0.2	99%	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	98%	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	98%	<1	<1
m+p-xylene	mg/kg	<2	<2	99%	<2	<2
o-Xylene	mg/kg	<1	<1	98%	<1	<1
naphthalene	mg/kg	<1	<1	[NA]	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	[NA]	<3	<3
Surrogate aaa-Trifluorotoluene	%	108	108	101	115	108

Client Reference: 99872.01, Marsden High School West Ryde

svTRH (C10-C40) in Soil						
Our Reference		260039-1	260039-2	260039-3	260039-4	260039-5
Your Reference	UNITS	BH1	BH1	BH2	BH3	BH4
Depth		0-0.1	0.4-0.5	0.4-0.5	0-0.1	0.4-0.5
Date Sampled		18/01/2021	18/01/2021	19/01/2021	18/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	27/01/2021	27/01/2021	27/01/2021	28/01/2021	27/01/2021
TRH C_{10} - C_{14}	mg/kg	73	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	120	<100	<100	150	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	770	<100
TRH >C_{10} -C_{16}	mg/kg	69	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	69	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	160	100	<100	870	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	2,100	<100
Total +ve TRH (>C10-C40)	mg/kg	230	100	<50	3,000	<50
Surrogate o-Terphenyl	%	90	102	97	113	101

svTRH (C10-C40) in Soil						
Our Reference		260039-7	260039-8	260039-9	260039-10	260039-11
Your Reference	UNITS	BH5	BH5	BH5	BH6	BH7
Depth		1-1.1	2-2.1	2.9-3.	0-0.1	0.4-0.5
Date Sampled		18/01/2021	18/01/2021	18/01/2021	19/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
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	%	102	103	102	100	98

Client Reference: 99872.01, Marsden High School West Ryde

svTRH (C10-C40) in Soil						
Our Reference		260039-12	260039-13	260039-14	260039-15	260039-16
Your Reference	UNITS	BH7	BH7	BH8	BH8	BH8
Depth		1.4-1.5	2.4-2.5	0-0.1	0.4-0.5	2-2.1
Date Sampled		19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	27/01/2021	27/01/2021	28/01/2021	28/01/2021	28/01/2021
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	%	102	102	100	99	97

svTRH (C10-C40) in Soil						
Our Reference		260039-17	260039-18	260039-20	260039-21	260039-22
Your Reference	UNITS	BH8	BH9	BH10	BH11	BH11
Depth		3.5-3.6	0-0.1	0-0.1	0-0.1	0.4-0.5
Date Sampled		19/01/2021	19/01/2021	19/01/2021	18/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	120	<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	170	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	550	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	720	<50
Surrogate o-Terphenyl	%	97	100	98	101	94

Client Reference: 99872.01, Marsden High School West Ryde

svTRH (C10-C40) in Soil						
Our Reference		260039-23	260039-24	260039-25	260039-26	260039-28
Your Reference	UNITS	BH11	BH12	BH13	BH13	BH14
Depth		0.9-1.0	0.4-0.5	0-0.1	0.9-1.0	0.4-0.5
Date Sampled		18/01/2021	19/01/2021	19/01/2021	19/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
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	%	97	97	98	96	95

svTRH (C10-C40) in Soil						
Our Reference		260039-29	260039-30	260039-32	260039-33	260039-34
Your Reference	UNITS	BH15	BH16	BH17	BH18	BH19
Depth		0-0.1	0-0.1	0.4-0.5	0-0.1	0.4-0.5
Date Sampled		18/01/2021	19/01/2021	19/01/2021	19/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
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	%	96	98	92	98	95

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svTRH (C10-C40) in Soil						
Our Reference		260039-36	260039-37	260039-38	260039-39	260039-40
Your Reference	UNITS	BH20	BH21	BH22	BH23	BD1/20210118
Depth		0-0.1	0-0.1	0.4-0.5	0.4-0.5	-
Date Sampled		18/01/2021	19/01/2021	18/01/2021	19/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
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	240
Total +ve TRH (>C10-C40)	mg/kg	<50	100	<50	<50	240
Surrogate o-Terphenyl	%	94	95	94	93	90

svTRH (C10-C40) in Soil				
Our Reference		260039-41	260039-42	260039-45
Your Reference	UNITS	BD10/20210119	BD2/20210118	BH2
Depth		-	-	1.4-1.5
Date Sampled		19/01/2021	18/01/2021	19/01/2021
Type of sample		soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50
Surrogate o-Terphenyl	%	93	92	91

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PAHs in Soil						
Our Reference		260039-1	260039-2	260039-3	260039-4	260039-5
Your Reference	UNITS	BH1	BH1	BH2	BH3	BH4
Depth		0-0.1	0.4-0.5	0.4-0.5	0-0.1	0.4-0.5
Date Sampled		18/01/2021	18/01/2021	19/01/2021	18/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
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	0.07	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	0.3	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	99	100	99	93	98

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PAHs in Soil						
Our Reference		260039-7	260039-8	260039-9	260039-10	260039-11
Your Reference	UNITS	BH5	BH5	BH5	BH6	BH7
Depth		1-1.1	2-2.1	2.9-3.	0-0.1	0.4-0.5
Date Sampled		18/01/2021	18/01/2021	18/01/2021	19/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
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	0.2
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	0.2
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	0.2
Benzo(a)pyrene	mg/kg	0.07	<0.05	<0.05	<0.05	0.1
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.3	<0.05	<0.05	<0.05	0.93
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	96	104	99	98

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PAHs in Soil						
Our Reference		260039-12	260039-13	260039-14	260039-15	260039-16
Your Reference	UNITS	BH7	BH7	BH8	BH8	BH8
Depth		1.4-1.5	2.4-2.5	0-0.1	0.4-0.5	2-2.1
Date Sampled		19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
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	0.1	<0.05	0.06	<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	1.2	<0.05	0.3	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	98	98	97	94	95

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PAHs in Soil						
Our Reference		260039-17	260039-18	260039-20	260039-21	260039-22
Your Reference	UNITS	BH8	BH9	BH10	BH11	BH11
Depth		3.5-3.6	0-0.1	0-0.1	0-0.1	0.4-0.5
Date Sampled		19/01/2021	19/01/2021	19/01/2021	18/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
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	0.1	<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	%	92	95	92	93	96

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PAHs in Soil						
Our Reference		260039-23	260039-24	260039-25	260039-26	260039-28
Your Reference	UNITS	BH11	BH12	BH13	BH13	BH14
Depth		0.9-1.0	0.4-0.5	0-0.1	0.9-1.0	0.4-0.5
Date Sampled		18/01/2021	19/01/2021	19/01/2021	19/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
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	0.2	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.1	<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	0.76	<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	%	93	96	96	97	95

Client Reference: 99872.01, Marsden High School West Ryde

PAHs in Soil						
Our Reference		260039-29	260039-30	260039-32	260039-33	260039-34
Your Reference	UNITS	BH15	BH16	BH17	BH18	BH19
Depth		0-0.1	0-0.1	0.4-0.5	0-0.1	0.4-0.5
Date Sampled		18/01/2021	19/01/2021	19/01/2021	19/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
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	0.07	<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	0.2	<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	%	96	95	96	97	96

Client Reference: 99872.01, Marsden High School West Ryde

PAHs in Soil						
Our Reference		260039-36	260039-37	260039-38	260039-39	260039-40
Your Reference	UNITS	BH20	BH21	BH22	BH23	BD1/20210118
Depth		0-0.1	0-0.1	0.4-0.5	0.4-0.5	-
Date Sampled		18/01/2021	19/01/2021	18/01/2021	19/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
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	1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	0.3	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	1.2	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	1.0	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	0.5	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	0.4	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	0.6	<0.2
Benzo(a)pyrene	mg/kg	0.06	<0.05	<0.05	0.4	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Total +ve PAH's	mg/kg	0.3	<0.05	<0.05	6.0	<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	%	95	97	96	96	94

PAHs in Soil				
Our Reference		260039-41	260039-42	260039-45
Your Reference	UNITS	BD10/20210119	BD2/20210118	BH2
Depth		-	-	1.4-1.5
Date Sampled		19/01/2021	18/01/2021	19/01/2021
Type of sample		soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021
Naphthalene	mg/kg	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.2	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	94	95	94

Client Reference: 99872.01, Marsden High School West Ryde

Organochlorine Pesticides in soil						
Our Reference		260039-1	260039-3	260039-4	260039-5	260039-7
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.1	0.4-0.5	0-0.1	0.4-0.5	1-1.1
Date Sampled		18/01/2021	19/01/2021	18/01/2021	18/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	106	107	100	107	107

Organochlorine Pesticides in soil						
Our Reference		260039-10	260039-11	260039-14	260039-18	260039-20
Your Reference	UNITS	BH6	BH7	BH8	BH9	BH10
Depth		0-0.1	0.4-0.5	0-0.1	0-0.1	0-0.1
Date Sampled		19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	107	107	105	102	101

Client Reference: 99872.01, Marsden High School West Ryde

Organochlorine Pesticides in soil						
Our Reference		260039-21	260039-24	260039-25	260039-28	260039-29
Your Reference	UNITS	BH11	BH12	BH13	BH14	BH15
Depth		0-0.1	0.4-0.5	0-0.1	0.4-0.5	0-0.1
Date Sampled		18/01/2021	19/01/2021	19/01/2021	18/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	100	105	104	104	102

Client Reference: 99872.01, Marsden High School West Ryde

Organochlorine Pesticides in soil						
Our Reference		260039-30	260039-32	260039-34	260039-36	260039-37
Your Reference	UNITS	BH16	BH17	BH19	BH20	BH21
Depth		0-0.1	0.4-0.5	0.4-0.5	0-0.1	0-0.1
Date Sampled		19/01/2021	19/01/2021	18/01/2021	18/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	102	106	106	103	105

Organochlorine Pesticides in soil		
Our Reference		260039-40
Your Reference	UNITS	BD1/20210118
Depth		-
Date Sampled		18/01/2021
Type of sample		soil
Date extracted	-	27/01/2021
Date analysed	-	28/01/2021
alpha-BHC	mg/kg	<0.1
HCB	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Surrogate TCMX	%	105

Organophosphorus Pesticides in Soil						
Our Reference		260039-1	260039-3	260039-4	260039-5	260039-7
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.1	0.4-0.5	0-0.1	0.4-0.5	1-1.1
Date Sampled		18/01/2021	19/01/2021	18/01/2021	18/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	106	107	100	107	107

Organophosphorus Pesticides in Soil						
Our Reference		260039-10	260039-11	260039-14	260039-18	260039-20
Your Reference	UNITS	BH6	BH7	BH8	BH9	BH10
Depth		0-0.1	0.4-0.5	0-0.1	0-0.1	0-0.1
Date Sampled		19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	107	107	105	102	101

Client Reference: 99872.01, Marsden High School West Ryde

Organophosphorus Pesticides in Soil						
Our Reference		260039-21	260039-24	260039-25	260039-28	260039-29
Your Reference	UNITS	BH11	BH12	BH13	BH14	BH15
Depth		0-0.1	0.4-0.5	0-0.1	0.4-0.5	0-0.1
Date Sampled		18/01/2021	19/01/2021	19/01/2021	18/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	100	105	104	104	102

Organophosphorus Pesticides in Soil						
Our Reference		260039-30	260039-32	260039-34	260039-36	260039-37
Your Reference	UNITS	BH16	BH17	BH19	BH20	BH21
Depth		0-0.1	0.4-0.5	0.4-0.5	0-0.1	0-0.1
Date Sampled		19/01/2021	19/01/2021	18/01/2021	18/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	102	106	106	103	105

Organophosphorus Pesticides in Soil		
Our Reference		260039-40
Your Reference	UNITS	BD1/20210118
Depth		-
Date Sampled		18/01/2021
Type of sample		soil
Date extracted	-	27/01/2021
Date analysed	-	28/01/2021
Dichlorvos	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Chlorpyriphos	mg/kg	<0.1
Parathion	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Ethion	mg/kg	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1
Surrogate TCMX	%	105

PCBs in Soil						
Our Reference		260039-1	260039-3	260039-4	260039-5	260039-7
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.1	0.4-0.5	0-0.1	0.4-0.5	1-1.1
Date Sampled		18/01/2021	19/01/2021	18/01/2021	18/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
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	%	106	107	100	107	107

PCBs in Soil						
Our Reference		260039-10	260039-11	260039-14	260039-18	260039-20
Your Reference	UNITS	BH6	BH7	BH8	BH9	BH10
Depth		0-0.1	0.4-0.5	0-0.1	0-0.1	0-0.1
Date Sampled		19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
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	%	107	107	105	102	101

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PCBs in Soil						
Our Reference		260039-21	260039-24	260039-25	260039-28	260039-29
Your Reference	UNITS	BH11	BH12	BH13	BH14	BH15
Depth		0-0.1	0.4-0.5	0-0.1	0.4-0.5	0-0.1
Date Sampled		18/01/2021	19/01/2021	19/01/2021	18/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
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	%	100	105	104	104	102

PCBs in Soil						
Our Reference		260039-30	260039-32	260039-34	260039-36	260039-37
Your Reference	UNITS	BH16	BH17	BH19	BH20	BH21
Depth		0-0.1	0.4-0.5	0.4-0.5	0-0.1	0-0.1
Date Sampled		19/01/2021	19/01/2021	18/01/2021	18/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	102	106	106	103	105

PCBs in Soil		
Our Reference		260039-40
Your Reference	UNITS	BD1/20210118
Depth		-
Date Sampled		18/01/2021
Type of sample		soil
Date extracted	-	27/01/2021
Date analysed	-	28/01/2021
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate TCMX	%	105

Acid Extractable metals in soil						
Our Reference		260039-1	260039-2	260039-3	260039-4	260039-5
Your Reference	UNITS	BH1	BH1	BH2	BH3	BH4
Depth		0-0.1	0.4-0.5	0.4-0.5	0-0.1	0.4-0.5
Date Sampled		18/01/2021	18/01/2021	19/01/2021	18/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Arsenic	mg/kg	6	8	4	<4	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	14	12	12	69	14
Copper	mg/kg	11	8	12	49	14
Lead	mg/kg	66	12	16	5	16
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	2	7	57	5
Zinc	mg/kg	33	5	15	33	10

Acid Extractable metals in soil						
Our Reference		260039-7	260039-8	260039-9	260039-10	260039-11
Your Reference	UNITS	BH5	BH5	BH5	BH6	BH7
Depth		1-1.1	2-2.1	2.9-3.	0-0.1	0.4-0.5
Date Sampled		18/01/2021	18/01/2021	18/01/2021	19/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Arsenic	mg/kg	8	4	10	4	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	17	16	21	8	12
Copper	mg/kg	12	8	11	4	46
Lead	mg/kg	22	17	19	19	38
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	7	4	3	3	5
Zinc	mg/kg	27	6	10	19	24

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Acid Extractable metals in soil						
Our Reference		260039-12	260039-13	260039-14	260039-15	260039-16
Your Reference	UNITS	BH7	BH7	BH8	BH8	BH8
Depth		1.4-1.5	2.4-2.5	0-0.1	0.4-0.5	2-2.1
Date Sampled		19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Arsenic	mg/kg	6	6	<4	6	10
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	13	20	11	13	8
Copper	mg/kg	19	13	22	23	29
Lead	mg/kg	39	20	21	19	15
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	7	4	7	11	8
Zinc	mg/kg	82	11	41	49	47

Acid Extractable metals in soil						
Our Reference		260039-17	260039-18	260039-20	260039-21	260039-22
Your Reference	UNITS	BH8	BH9	BH10	BH11	BH11
Depth		3.5-3.6	0-0.1	0-0.1	0-0.1	0.4-0.5
Date Sampled		19/01/2021	19/01/2021	19/01/2021	18/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Arsenic	mg/kg	<4	7	5	<4	8
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	15	12	68	23
Copper	mg/kg	7	38	19	20	11
Lead	mg/kg	27	110	25	7	23
Mercury	mg/kg	<0.1	0.4	<0.1	<0.1	0.3
Nickel	mg/kg	2	12	13	54	4
Zinc	mg/kg	12	220	39	32	14

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Acid Extractable metals in soil						
Our Reference		260039-23	260039-24	260039-25	260039-26	260039-28
Your Reference	UNITS	BH11	BH12	BH13	BH13	BH14
Depth		0.9-1.0	0.4-0.5	0-0.1	0.9-1.0	0.4-0.5
Date Sampled		18/01/2021	19/01/2021	19/01/2021	19/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Arsenic	mg/kg	8	7	<4	<4	10
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	16	13	6	12	19
Copper	mg/kg	11	14	8	16	11
Lead	mg/kg	20	22	15	15	17
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	1	4	3	7	2
Zinc	mg/kg	6	16	26	17	7

Acid Extractable metals in soil						
Our Reference		260039-29	260039-30	260039-32	260039-33	260039-34
Your Reference	UNITS	BH15	BH16	BH17	BH18	BH19
Depth		0-0.1	0-0.1	0.4-0.5	0-0.1	0.4-0.5
Date Sampled		18/01/2021	19/01/2021	19/01/2021	19/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Arsenic	mg/kg	12	15	10	25	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	8	11	21	11	20
Copper	mg/kg	10	15	18	42	12
Lead	mg/kg	28	26	38	29	42
Mercury	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Nickel	mg/kg	4	5	8	5	5
Zinc	mg/kg	33	29	41	40	22

Acid Extractable metals in soil						
Our Reference		260039-36	260039-37	260039-38	260039-39	260039-40
Your Reference	UNITS	BH20	BH21	BH22	BH23	BD1/20210118
Depth		0-0.1	0-0.1	0.4-0.5	0.4-0.5	-
Date Sampled		18/01/2021	19/01/2021	18/01/2021	19/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Arsenic	mg/kg	7	6	6	8	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	17	14	17	12	15
Copper	mg/kg	12	25	3	17	14
Lead	mg/kg	24	25	15	24	14
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	7	7	2	3	6
Zinc	mg/kg	35	44	16	20	11

Acid Extractable metals in soil					
Our Reference		260039-41	260039-42	260039-45	260039-46
Your Reference	UNITS	BD10/20210119	BD2/20210118	BH2	BH7 - [TRIPLICATE]
Depth		-	-	1.4-1.5	0.4-0.5
Date Sampled		19/01/2021	18/01/2021	19/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil
Date prepared	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Arsenic	mg/kg	6	9	4	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	8	23	10	14
Copper	mg/kg	10	12	9	20
Lead	mg/kg	20	22	14	42
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	5	2	4
Zinc	mg/kg	10	14	7	26

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Misc Soil - Inorg						
Our Reference		260039-1	260039-3	260039-4	260039-5	260039-7
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.1	0.4-0.5	0-0.1	0.4-0.5	1-1.1
Date Sampled		18/01/2021	19/01/2021	18/01/2021	18/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference		260039-10	260039-11	260039-14	260039-18	260039-20
Your Reference	UNITS	BH6	BH7	BH8	BH9	BH10
Depth		0-0.1	0.4-0.5	0-0.1	0-0.1	0-0.1
Date Sampled		19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference		260039-21	260039-24	260039-25	260039-28	260039-29
Your Reference	UNITS	BH11	BH12	BH13	BH14	BH15
Depth		0-0.1	0.4-0.5	0-0.1	0.4-0.5	0-0.1
Date Sampled		18/01/2021	19/01/2021	19/01/2021	18/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference		260039-30	260039-32	260039-34	260039-36	260039-37
Your Reference	UNITS	BH16	BH17	BH19	BH20	BH21
Depth		0-0.1	0.4-0.5	0.4-0.5	0-0.1	0-0.1
Date Sampled		19/01/2021	19/01/2021	18/01/2021	18/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg		
Our Reference		260039-40
Your Reference	UNITS	BD1/20210118
Depth		-
Date Sampled		18/01/2021
Type of sample		soil
Date prepared	-	27/01/2021
Date analysed	-	27/01/2021
Total Phenolics (as Phenol)	mg/kg	<5

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Moisture						
Our Reference		260039-1	260039-2	260039-3	260039-4	260039-5
Your Reference	UNITS	BH1	BH1	BH2	BH3	BH4
Depth		0-0.1	0.4-0.5	0.4-0.5	0-0.1	0.4-0.5
Date Sampled		18/01/2021	18/01/2021	19/01/2021	18/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Moisture	%	12	17	22	4.2	22

Moisture						
Our Reference		260039-7	260039-8	260039-9	260039-10	260039-11
Your Reference	UNITS	BH5	BH5	BH5	BH6	BH7
Depth		1-1.1	2-2.1	2.9-3.	0-0.1	0.4-0.5
Date Sampled		18/01/2021	18/01/2021	18/01/2021	19/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Moisture	%	20	22	19	4.5	12

Moisture						
Our Reference		260039-12	260039-13	260039-14	260039-15	260039-16
Your Reference	UNITS	BH7	BH7	BH8	BH8	BH8
Depth		1.4-1.5	2.4-2.5	0-0.1	0.4-0.5	2-2.1
Date Sampled		19/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Moisture	%	12	20	6.1	14	13

Moisture						
Our Reference		260039-17	260039-18	260039-20	260039-21	260039-22
Your Reference	UNITS	BH8	BH9	BH10	BH11	BH11
Depth		3.5-3.6	0-0.1	0-0.1	0-0.1	0.4-0.5
Date Sampled		19/01/2021	19/01/2021	19/01/2021	18/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Moisture	%	13	11	12	9.8	25

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Moisture						
Our Reference		260039-23	260039-24	260039-25	260039-26	260039-28
Your Reference	UNITS	BH11	BH12	BH13	BH13	BH14
Depth		0.9-1.0	0.4-0.5	0-0.1	0.9-1.0	0.4-0.5
Date Sampled		18/01/2021	19/01/2021	19/01/2021	19/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Moisture	%	29	12	4.7	18	21

Moisture						
Our Reference		260039-29	260039-30	260039-32	260039-33	260039-34
Your Reference	UNITS	BH15	BH16	BH17	BH18	BH19
Depth		0-0.1	0-0.1	0.4-0.5	0-0.1	0.4-0.5
Date Sampled		18/01/2021	19/01/2021	19/01/2021	19/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Moisture	%	5.7	13	17	24	17

Moisture						
Our Reference		260039-36	260039-37	260039-38	260039-39	260039-40
Your Reference	UNITS	BH20	BH21	BH22	BH23	BD1/20210118
Depth		0-0.1	0-0.1	0.4-0.5	0.4-0.5	-
Date Sampled		18/01/2021	19/01/2021	18/01/2021	19/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	27/01/2021	27/01/2021	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Moisture	%	16	14	8.1	8.4	21

Moisture				
Our Reference		260039-41	260039-42	260039-45
Your Reference	UNITS	BD10/20210119	BD2/20210118	BH2
Depth		-	-	1.4-1.5
Date Sampled		19/01/2021	18/01/2021	19/01/2021
Type of sample		soil	soil	soil
Date prepared	-	27/01/2021	27/01/2021	27/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021
Moisture	%	13	25	16

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Asbestos ID - soils						
Our Reference		260039-1	260039-3	260039-4	260039-5	260039-7
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.1	0.4-0.5	0-0.1	0.4-0.5	1-1.1
Date Sampled		18/01/2021	19/01/2021	18/01/2021	18/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Sample mass tested	g	Approx. 35g	Approx. 30g	Approx. 35g	Approx. 30g	Approx. 30g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		260039-8	260039-10	260039-11	260039-12	260039-14
Your Reference	UNITS	BH5	BH6	BH7	BH7	BH8
Depth		2-2.1	0-0.1	0.4-0.5	1.4-1.5	0-0.1
Date Sampled		18/01/2021	19/01/2021	19/01/2021	19/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Sample mass tested	g	Approx. 35g	Approx. 35g	Approx. 35g	Approx. 35g	Approx. 35g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		260039-15	260039-16	260039-18	260039-20	260039-21
Your Reference	UNITS	BH8	BH8	BH9	BH10	BH11
Depth		0.4-0.5	2-2.1	0-0.1	0-0.1	0-0.1
Date Sampled		19/01/2021	19/01/2021	19/01/2021	19/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Sample mass tested	g	Approx. 35g	Approx. 35g	Approx. 35g	Approx. 35g	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		260039-22	260039-23	260039-24	260039-25	260039-28
Your Reference	UNITS	BH11	BH11	BH12	BH13	BH14
Depth		0.4-0.5	0.9-1.0	0.4-0.5	0-0.1	0.4-0.5
Date Sampled		18/01/2021	18/01/2021	19/01/2021	19/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Sample mass tested	g	Approx. 25g	Approx. 30g	Approx. 40g	Approx. 40g	Approx. 30g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Red 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

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Asbestos ID - soils						
Our Reference		260039-29	260039-30	260039-32	260039-33	260039-34
Your Reference	UNITS	BH15	BH16	BH17	BH18	BH19
Depth		0-0.1	0-0.1	0.4-0.5	0-0.1	0.4-0.5
Date Sampled		18/01/2021	19/01/2021	19/01/2021	19/01/2021	18/01/2021
Type of sample		soil	soil	soil	soil	soil
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Sample mass tested	g	Approx. 40g	Approx. 35g	Approx. 30g	Approx. 30g	Approx. 30g
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-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		260039-36	260039-37	260039-38	260039-39
Your Reference	UNITS	BH20	BH21	BH22	BH23
Depth		0-0.1	0-0.1	0.4-0.5	0.4-0.5
Date Sampled		18/01/2021	19/01/2021	18/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Sample mass tested	g	Approx. 35g	Approx. 35g	Approx. 40g	Approx. 40g
Sample Description	-	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
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Misc Inorg - Soil						
Our Reference		260039-2	260039-9	260039-13	260039-17	260039-26
Your Reference	UNITS	BH1	BH5	BH7	BH8	BH13
Depth		0.4-0.5	2.9-3.	2.4-2.5	3.5-3.6	0.9-1.0
Date Sampled		18/01/2021	18/01/2021	19/01/2021	19/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
Date analysed	-	28/01/2021	28/01/2021	28/01/2021	28/01/2021	28/01/2021
pH 1:5 soil:water	pH Units	5.1	4.9	5.4	5.8	4.9

CEC						
Our Reference		260039-2	260039-9	260039-13	260039-17	260039-26
Your Reference	UNITS	BH1	BH5	BH7	BH8	BH13
Depth		0.4-0.5	2.9-3.	2.4-2.5	3.5-3.6	0.9-1.0
Date Sampled		18/01/2021	18/01/2021	19/01/2021	19/01/2021	19/01/2021
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021
Date analysed	-	29/01/2021	29/01/2021	29/01/2021	29/01/2021	29/01/2021
Exchangeable Ca	meq/100g	1.6	0.4	5.7	0.3	0.2
Exchangeable K	meq/100g	0.4	0.2	0.5	0.1	0.2
Exchangeable Mg	meq/100g	1.5	1.8	4.5	2.8	3.1
Exchangeable Na	meq/100g	0.29	1.8	0.22	0.88	0.59
Cation Exchange Capacity	meq/100g	3.8	4.3	11	4.1	4.1

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Metals-020	Determination of various metals by ICP-AES.
Metals-020	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-AES analytical finish.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	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-020	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-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-021	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-022	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.

Method ID	Methodology Summary
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. 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-022/025	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-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	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-023	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.

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QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	260039-3
Date extracted	-			28/01/2021	1	28/01/2021	28/01/2021		28/01/2021	28/01/2021
Date analysed	-			29/01/2021	1	29/01/2021	29/01/2021		29/01/2021	29/01/2021
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	127	117
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	127	117
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	122	114
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	130	114
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	130	127
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	125	114
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	129	117
naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	132	1	115	113	2	121	103

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	260039-21
Date extracted	-			[NT]	11	28/01/2021	28/01/2021		28/01/2021	28/01/2021
Date analysed	-			[NT]	11	29/01/2021	29/01/2021		29/01/2021	29/01/2021
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	11	<25	<25	0	125	105
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	11	<25	<25	0	125	105
Benzene	mg/kg	0.2	Org-023	[NT]	11	<0.2	<0.2	0	123	102
Toluene	mg/kg	0.5	Org-023	[NT]	11	<0.5	<0.5	0	125	105
Ethylbenzene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	130	114
m+p-xylene	mg/kg	2	Org-023	[NT]	11	<2	<2	0	123	102
o-Xylene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	127	105
naphthalene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	11	102	106	4	114	92

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]	20	28/01/2021	28/01/2021		[NT]	[NT]
Date analysed	-			[NT]	20	29/01/2021	29/01/2021		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	20	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	20	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	20	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	20	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	20	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	20	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	20	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-023	[NT]	20	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	20	114	98	15	[NT]	[NT]

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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]	29	28/01/2021	28/01/2021		[NT]	[NT]
Date analysed	-			[NT]	29	29/01/2021	29/01/2021		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	29	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	29	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	29	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	29	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	29	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	29	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	29	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-023	[NT]	29	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	29	103	114	10	[NT]	[NT]

Client Reference: 99872.01, Marsden High School West Ryde

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	260039-3
Date extracted	-			27/01/2021	1	27/01/2021	27/01/2021		27/01/2021	27/01/2021
Date analysed	-			27/01/2021	1	27/01/2021	27/01/2021		27/01/2021	27/01/2021
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	73	77	5	113	123
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	120	170	34	78	84
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	<100	100	0	92	110
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	69	75	8	113	123
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	160	220	32	78	84
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	<100	100	0	92	110
Surrogate o-Terphenyl	%		Org-020	90	1	90	106	16	89	98

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	260039-21
Date extracted	-			[NT]	11	27/01/2021	27/01/2021		27/01/2021	27/01/2021
Date analysed	-			[NT]	11	27/01/2021	27/01/2021		28/01/2021	28/01/2021
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	11	<50	<50	0	125	125
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	11	<100	<100	0	80	102
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	11	<100	<100	0	92	#
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	11	<50	<50	0	125	125
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	11	<100	<100	0	80	102
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	11	<100	<100	0	92	#
Surrogate o-Terphenyl	%		Org-020	[NT]	11	98	100	2	94	96

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	20	27/01/2021	27/01/2021		[NT]	[NT]
Date analysed	-			[NT]	20	28/01/2021	28/01/2021		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	20	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	20	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	20	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	20	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	20	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	20	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	20	98	99	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]	29	27/01/2021	27/01/2021		[NT]	[NT]
Date analysed	-			[NT]	29	28/01/2021	28/01/2021		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	29	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	29	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	29	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	29	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	29	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	29	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	29	96	96	0	[NT]	[NT]

Client Reference: 99872.01, Marsden High School West Ryde

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	260039-3
Date extracted	-			27/01/2021	1	27/01/2021	27/01/2021		27/01/2021	27/01/2021
Date analysed	-			28/01/2021	1	28/01/2021	28/01/2021		28/01/2021	28/01/2021
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	97	97
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	103	103
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	102	104
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	97	97
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	100	99
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	100	102
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	108	106
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	<0.05	<0.05	0	117	119
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	90	1	99	99	0	91	92

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	260039-21
Date extracted	-			[NT]	11	27/01/2021	27/01/2021		27/01/2021	27/01/2021
Date analysed	-			[NT]	11	28/01/2021	28/01/2021		28/01/2021	28/01/2021
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	97	97
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	103	101
Fluorene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	100	100
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	107	101
Anthracene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	11	0.2	0.4	67	107	104
Pyrene	mg/kg	0.1	Org-022/025	[NT]	11	0.2	0.3	40	105	105
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	11	0.1	0.2	67	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	11	0.1	0.2	67	106	106
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	11	0.2	0.3	40	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	11	0.1	0.2	67	124	119
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	11	98	100	2	93	93

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QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	20	27/01/2021	27/01/2021		[NT]	[NT]
Date analysed	-			[NT]	20	28/01/2021	28/01/2021		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	20	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	20	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	20	92	94	2	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	29	27/01/2021	27/01/2021		[NT]	[NT]
Date analysed	-			[NT]	29	28/01/2021	28/01/2021		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	29	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	29	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	29	96	97	1	[NT]	[NT]

Client Reference: 99872.01, Marsden High School West Ryde

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	260039-3
Date extracted	-			27/01/2021	1	27/01/2021	27/01/2021		27/01/2021	27/01/2021
Date analysed	-			28/01/2021	1	28/01/2021	28/01/2021		28/01/2021	28/01/2021
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	101	104
HCB	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	104	104
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	111	111
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	95	97
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	110	112
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	111	113
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	95	95
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	93	95
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	105	108
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	116	120
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	102	1	106	107	1	104	106

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QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	260039-21
Date extracted	-			[NT]	11	27/01/2021	27/01/2021		27/01/2021	27/01/2021
Date analysed	-			[NT]	11	28/01/2021	28/01/2021		28/01/2021	28/01/2021
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	104	103
HCB	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	108	108
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	117	107
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	99	95
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	107	110
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	111	113
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	107	107
Endrin	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	91	120
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	106	110
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	95	103
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	11	107	107	0	102	99

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	20	27/01/2021	27/01/2021		[NT]	[NT]
Date analysed	-			[NT]	20	28/01/2021	28/01/2021		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	20	101	102	1	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	29	27/01/2021	27/01/2021		[NT]	[NT]
Date analysed	-			[NT]	29	28/01/2021	28/01/2021		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	29	102	105	3	[NT]	[NT]

Client Reference: 99872.01, Marsden High School West Ryde

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	260039-3
Date extracted	-			27/01/2021	1	27/01/2021	27/01/2021		27/01/2021	27/01/2021
Date analysed	-			28/01/2021	1	28/01/2021	28/01/2021		28/01/2021	28/01/2021
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	124	120
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	109	114
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	117	119
Malathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	84	87
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	101	103
Parathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	118	112
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	139	135
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	102	1	106	107	1	104	106

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	260039-21
Date extracted	-			[NT]	11	27/01/2021	27/01/2021		27/01/2021	27/01/2021
Date analysed	-			[NT]	11	28/01/2021	28/01/2021		28/01/2021	28/01/2021
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	92	122
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	112	114
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	87	109
Malathion	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	127	124
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	105	111
Parathion	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	86	116
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	103	137
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	11	107	107	0	102	99

Client Reference: 99872.01, Marsden High School West Ryde

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	20	27/01/2021	27/01/2021		[NT]	[NT]
Date analysed	-			[NT]	20	28/01/2021	28/01/2021		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	20	101	102	1	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	29	27/01/2021	27/01/2021		[NT]	[NT]
Date analysed	-			[NT]	29	28/01/2021	28/01/2021		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	0.2	67	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	29	102	105	3	[NT]	[NT]

Client Reference: 99872.01, Marsden High School West Ryde

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	260039-3
Date extracted	-			27/01/2021	1	27/01/2021	27/01/2021		27/01/2021	27/01/2021
Date analysed	-			28/01/2021	1	28/01/2021	28/01/2021		28/01/2021	28/01/2021
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	120	120
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	102	1	106	107	1	104	106

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	260039-21
Date extracted	-			[NT]	11	27/01/2021	27/01/2021		27/01/2021	27/01/2021
Date analysed	-			[NT]	11	28/01/2021	28/01/2021		28/01/2021	28/01/2021
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	100	120
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	11	107	107	0	102	99

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	20	27/01/2021	27/01/2021		[NT]	[NT]
Date analysed	-			[NT]	20	28/01/2021	28/01/2021		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	20	101	102	1	[NT]	[NT]

Client Reference: 99872.01, Marsden High School West Ryde

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	29	27/01/2021	27/01/2021		[NT]	[NT]
Date analysed	-			[NT]	29	28/01/2021	28/01/2021		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	29	102	105	3	[NT]	[NT]

Client Reference: 99872.01, Marsden High School West Ryde

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	260039-3
Date prepared	-			28/01/2021	1	28/01/2021	28/01/2021		28/01/2021	28/01/2021
Date analysed	-			28/01/2021	1	28/01/2021	28/01/2021		28/01/2021	28/01/2021
Arsenic	mg/kg	4	Metals-020	<4	1	6	6	0	104	80
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	106	80
Chromium	mg/kg	1	Metals-020	<1	1	14	14	0	103	84
Copper	mg/kg	1	Metals-020	<1	1	11	12	9	106	99
Lead	mg/kg	1	Metals-020	<1	1	66	63	5	102	81
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	94	104
Nickel	mg/kg	1	Metals-020	<1	1	4	4	0	105	82
Zinc	mg/kg	1	Metals-020	<1	1	33	31	6	103	81

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	260039-21
Date prepared	-			[NT]	11	28/01/2021	28/01/2021		28/01/2021	28/01/2021
Date analysed	-			[NT]	11	28/01/2021	28/01/2021		28/01/2021	28/01/2021
Arsenic	mg/kg	4	Metals-020	[NT]	11	5	5	0	109	81
Cadmium	mg/kg	0.4	Metals-020	[NT]	11	<0.4	<0.4	0	111	86
Chromium	mg/kg	1	Metals-020	[NT]	11	12	15	22	108	107
Copper	mg/kg	1	Metals-020	[NT]	11	46	16	97	110	108
Lead	mg/kg	1	Metals-020	[NT]	11	38	36	5	106	73
Mercury	mg/kg	0.1	Metals-021	[NT]	11	<0.1	<0.1	0	103	109
Nickel	mg/kg	1	Metals-020	[NT]	11	5	4	22	109	73
Zinc	mg/kg	1	Metals-020	[NT]	11	24	22	9	109	#

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	20	28/01/2021	28/01/2021		[NT]	[NT]
Date analysed	-			[NT]	20	28/01/2021	28/01/2021		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	20	5	5	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	20	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	20	12	12	0	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	20	19	21	10	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	20	25	27	8	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	20	13	14	7	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	20	39	42	7	[NT]	[NT]

Client Reference: 99872.01, Marsden High School West Ryde

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	29	28/01/2021	28/01/2021		[NT]	[NT]
Date analysed	-			[NT]	29	28/01/2021	28/01/2021		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	29	12	13	8	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	29	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	29	8	9	12	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	29	10	14	33	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	29	28	30	7	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	29	4	4	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	29	33	33	0	[NT]	[NT]

Client Reference: 99872.01, Marsden High School West Ryde

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	260039-3
Date prepared	-			27/01/2021	1	27/01/2021	27/01/2021		27/01/2021	27/01/2021
Date analysed	-			27/01/2021	1	27/01/2021	27/01/2021		27/01/2021	27/01/2021
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	1	<5	<5	0	100	98

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	260039-21
Date prepared	-			[NT]	11	27/01/2021	27/01/2021		27/01/2021	27/01/2021
Date analysed	-			[NT]	11	27/01/2021	27/01/2021		27/01/2021	27/01/2021
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	[NT]	11	<5	<5	0	99	99

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	20	27/01/2021	27/01/2021		[NT]	[NT]
Date analysed	-			[NT]	20	27/01/2021	27/01/2021		[NT]	[NT]
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	[NT]	20	<5	<5	0	[NT]	[NT]

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	29	27/01/2021	27/01/2021		[NT]	[NT]
Date analysed	-			[NT]	29	27/01/2021	27/01/2021		[NT]	[NT]
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	[NT]	29	<5	<5	0	[NT]	[NT]

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date prepared	-			28/01/2021	9	28/01/2021	28/01/2021		28/01/2021	[NT]
Date analysed	-			28/01/2021	9	28/01/2021	28/01/2021		28/01/2021	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	9	4.9	5.0	2	100	[NT]

QUALITY CONTROL: CEC						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	260039-9
Date prepared	-			29/01/2021	2	29/01/2021	29/01/2021		29/01/2021	29/01/2021
Date analysed	-			29/01/2021	2	29/01/2021	29/01/2021		29/01/2021	29/01/2021
Exchangeable Ca	meq/100g	0.1	Metals-020	<0.1	2	1.6	1.5	6	105	104
Exchangeable K	meq/100g	0.1	Metals-020	<0.1	2	0.4	0.3	29	105	91
Exchangeable Mg	meq/100g	0.1	Metals-020	<0.1	2	1.5	1.4	7	107	106
Exchangeable Na	meq/100g	0.1	Metals-020	<0.1	2	0.29	0.35	19	111	79

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.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

Asbestos: A portion of the supplied 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 260039-11 for Cu. Therefore a triplicate result has been issued as laboratory sample number 260039-46.
- # Percent recovery is not possible to report due to the inhomogeneous nature of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

TRH_S_NEPM:
Percent recovery for the matrix spike is not possible to report as the high concentration of analytes in sample/s 260039-21ms have caused interference.

D21/78776

21/01/21 COC updated recd 1432

Douglas Partners
Geotechnics | Environment | Groundwater

F.14 - CHAIN OF CUSTODY DESPATCH SHEET

Project No:	99872.01	**Suburb:**	West Ryde	**To:**	Envirolab Services Pty Ltd
Project Name:	Marsden High School	**Order Number**			12 Ashley Street, Chatswood, NSW 2067
Project Manager:	Lisa Teng	**Sampler:**	TM	**Attn:**	Aileen Hie
Emails:	lisa.Teng@douglaspartners.com.a			**Phone:**	
Date Required:	Standard ☐			**Email:**	Ahie@envirolab.com.au

Prior Storage: Fridge/freezer — Do samples contain 'potential' HBM? No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)

Sample ID	Depth Range	Lab ID	Date Sampled	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: COMBO 8A	COMBO 3A	COMBO 3	pH and CEC	hold	TRH BTEX	Combo 8			Notes/preservation
BH1	0-0.1	1	18/01/21			x									
BH1	0.4-0.5	2	18/01/21					x	x						
BH2	0.4-0.5	3	19/01/21			x									
~~BH2~~	~~1.4-1.5~~	~~XR~~	19/01/21					(x)							
BH3	0-0.1	4	18/01/21			x									
BH4	0.4-0.5	5	18/01/21			x									
BH4	2-2.1	6	18/01/21							x					
BH5	1-1.1	7	18/01/21			x									
BH5	2-2.1	8	18/01/21				x								
BH5	2.9-3.0	9	18/01/21					x	x						
BH6	0-0.1	10	19/01/21			x									
BH7	0.4-0.5	11	19/01/21			x									
BH7	1.4-1.5	12	19/01/21				x								
BH7	2.4-2.5	13	19/01/21					x	x						
BH8	0-0.1	14	19/01/21			X									
PQL (S) mg/k															**ANZECC PQLs req'd for all water analytes** ☐

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 266037
Date Received: 21/01/21
Time Received: 16:40
Received By:
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Lab Report/Reference No:

Total number of samples in container: | **Relinquished by:** | **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd | **Address:** | **Phone:** | **Fax:**

Signed: | **Received by:** Envirolab | **Date & Time:** 21/01/21 16:40

Douglas Partners
Geotechnics / Environment / Groundwater

F.14 - CHAIN OF CUSTODY DESPATCH SHEET

Project No:	99872.01	**Suburb:**	West Ryde	**To:**	Envirolab Services Pty Ltd
Project Name:	Marsden High School	**Order Number**			12 Ashley Street, Chatswood, NSW 2067
Project Manager:	Lisa Teng	**Sampler:**	TM	**Attn:**	Aileen Hie
Emails:	lisa.Teng@douglaspartners.com.a			**Phone:**	
Date Required:	Standard ☐			**Email:**	Ahie@envirolab.com.au
Prior Storage:	Fridge/freezer	Do samples contain 'potential' HBM?	No ☐	(If YES, then handle, transport and store in accordance with FPM HAZID)	

Sample ID	Depth Range	Lab ID	Date Sampled	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: COMBO 8A	COMBO 3A	COMBO 3	pH and CEC	HOLD					Notes/preservation
BH8	0.4-0.5	15	19/01/21	S	G		x								
BH8	2-2.1	16	19/01/21	S	G		x								
BH8	3.5-3.6	17	19/01/21	S	G			x	x						
BH9	0-0.1	18	19/01/21	S	G	X									
BH9	0.4-0.5	19	19/01/21	S	G					x					
BH10	0-0.1	20	19/01/21	S	G	X									
BH11	0-0.1	21	18/01/21	S	G	X									
BH11	0.4-0.5	22	18/01/21	S	G		X								
BH11	0.9-1.0	23	18/01/21	S	G		X								
BH12	0.4-0.5	24	19/01/21	S	G	X									
BH13	0-0.1	25	19/01/21	S	G	X									
BH13	0.9-1.0	26	19/01/21	S	G			X	X						
BH13	1.4-1.5	27	19/01/21	S	G					X					
BH14	0.4-0.5	28	18/01/21	S	G	X									
BH15	0-0.1	29	18/01/21	S	G	X									
PQL (S) mg/k															**ANZECC PQLs req'd for all water analytes** ☐

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 260039
Date Received: 21/01/21
Time Received: 16:40
Received By: M
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Lab Report/Reference No:

Total number of samples in container: | **Relinquished by:** | **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd | **Address:** | **Phone:** | **Fax:**

Signed: | **Received by:** Envirolab M | **Date & Time:** 21/01/21 16:40

Douglas Partners
Geotechnics | Environment | Groundwater

F.14 - CHAIN OF CUSTODY DESPATCH SHEET

Project No:	99872.01	**Suburb:**	West Ryde	**To:**	Envirolab Services Pty Ltd
Project Name:	Marsden High School	**Order Number**			12 Ashley Street, Chatswood, NSW 2067
Project Manager:	Lisa Teng	**Sampler:**	TM	**Attn:**	Aileen Hie
Emails:	lisa.Teng@douglaspartners.com.a			**Phone:**	
Date Required:	Standard ☐			**Email:**	Ahie@envirolab.com.au

Prior Storage: Fridge/freezer — Do samples contain 'potential' HBM? No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)

Sample ID	Depth Range	Lab ID	Date Sampled	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	Analytes: COMBO 8A	COMBO 3A	COMBO 3	pH and CEC	hold	TRH BTEX	Combo 8			Notes/preservation
BH16	0-0.1	30	19/01/21	S	G	x									
BH16	0.9-1.0	31	19/01/21	S	G					X					
BH17	0.4-0.5	32	19/01/21	S	G	X									
BH18	0-0.1	33	19/01/21	S	G		x								
BH19	0.4-0.5	34	18/01/21	S	G	X									
BH19	1.4-1.5	35	18/01/21	S	G					X					
BH20	0-0.1	36	18/01/21	S	G	x									
BH21	0-0.1	37	19/01/21	S	G	X									
BH22	0.4-0.5	38	18/01/21	S	G		x								
BH23	0.4-0.5	39	19/01/21	S	G		x								
BD1/20210118	-	40	18/01/21	S	G							x			
BD10/20210119	-	41	19/01/21	S	G			x							
BD2/20210118	-	42	18/01/21	S	G			x							
BD6/20210119	-		19/01/21	S	G							x			**SEND AS INTERLAB TO SGS**
Trip Spike		43	18-19/01/21	S	G						x				
PQL (S) mg/k															**ANZECC PQLs req'd for all water analytes** ☐

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 260039
Date Received: 21/01/21
Time Received: 16:40
Received By: SR
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Lab Report/Reference No:

Total number of samples in container: **Relinquished by:** **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd **Address:** **Phone:** **Fax:**

Signed: **Received by:** Envirolab SR **Date & Time:** 21/01/21 16:40

D21/78776

Douglas Partners
Geotechnics / Environment / Groundwater

F.14 - CHAIN OF CUSTODY DESPATCH SHEET

Project No:	99872.01	**Suburb:**	West Ryde	**To:**	Envirolab Services Pty Ltd
Project Name:	Marsden High School	**Order Number**			12 Ashley Street, Chatswood, NSW 2067
Project Manager:	Lisa Teng	**Sampler:**	TM	**Attn:**	Aileen Hie
Emails:	.isa.Teng@douglaspartners.com.a			**Phone:**	
Date Required:	Standard ☐			**Email:**	Ahie@envirolab.com.au

Prior Storage: Fridge/freezer — Do samples contain 'potential' HBM? No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)

Sample ID	Depth Range	Lab ID	Date Sampled	Sample Type (S - soil, W - water)	Container Type (G - glass, P - plastic)	COMBO 8A	COMBO 3A	COMBO 3	pH and CEC	hold	TRH BTEX	Combo 8			Notes/preservation
Trip Blank	-	44	18-19/01/21	S	G						x				
BH2	1.4-1.5	45	19/01/21												
		↑ extra received.													
PQL (S) mg/k															ANZECC PQLs req'd for all water analytes ☐

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 260039
Date Received: 21/01/21
Time Received: 16:40
Received By: [illegible]
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit
Metals to Analyse: 8HM unless specified here:
Lab Report/Reference No:
Total number of samples in container: **Relinquished by:** **Transported to laboratory by:**
Send Results to: Douglas Partners Pty Ltd **Address:** **Phone:** **Fax:**
Signed: **Received by:** Envirolab [signature] **Date & Time:** 21/01/21 16:40.

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

SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Pty Ltd
Attention	Lisa Teng

Sample Login Details

Your reference	99872.01, Marsden High School West Ryde
Envirolab Reference	260039
Date Sample Received	21/01/2021
Date Instructions Received	21/01/2021
Date Results Expected to be Reported	29/01/2021

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	45 soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	16.4
Cooling Method	Ice
Sampling Date Provided	YES

Comments

extra 250ml jar sample received labelled BH 19/01/21

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

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

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBsin Soil	Acid Extractable metalsin soil	Misc Soil - Inorg	Asbestos ID - soils	Misc Inorg - Soil	CEC	On Hold
BH1-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓			
BH1-0.4-0.5	✓	✓	✓				✓			✓	✓	
BH2-0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓			
BH3-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓			
BH4-0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓			
BH4-2-2.1												✓
BH5-1-1.1	✓	✓	✓	✓	✓	✓	✓	✓	✓			
BH5-2-2.1	✓	✓	✓				✓		✓			
BH5-2.9-3.	✓	✓	✓				✓			✓	✓	
BH6-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓			
BH7-0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓			
BH7-1.4-1.5	✓	✓	✓				✓		✓			
BH7-2.4-2.5	✓	✓	✓				✓			✓	✓	
BH8-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓			
BH8-0.4-0.5	✓	✓	✓				✓		✓			
BH8-2-2.1	✓	✓	✓				✓		✓			
BH8-3.5-3.6	✓	✓	✓				✓			✓	✓	
BH9-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓			
BH9-0.4-0.5												✓
BH10-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓			
BH11-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓			
BH11-0.4-0.5	✓	✓	✓				✓		✓			
BH11-0.9-1.0	✓	✓	✓				✓		✓			
BH12-0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓			
BH13-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓			
BH13-0.9-1.0	✓	✓	✓				✓			✓	✓	
BH13-1.4-1.5												✓
BH14-0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓			
BH15-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓			
BH16-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓			
BH16-0.9-1.0												✓
BH17-0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓			

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

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBsin Soil	Acid Extractable metalsin soil	Misc Soil - Inorg	Asbestos ID - soils	Misc Inorg - Soil	CEC	On Hold
BH18-0-0.1	✓	✓	✓				✓		✓			
BH19-0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓			
BH19-1.4-1.5												✓
BH20-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓			
BH21-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓			
BH22-0.4-0.5	✓	✓	✓				✓		✓			
BH23-0.4-0.5	✓	✓	✓				✓		✓			
BD1/20210118	✓	✓	✓	✓	✓	✓	✓	✓				
BD10/20210119	✓	✓	✓				✓					
BD2/20210118	✓	✓	✓				✓					
Trip Spike	✓											
Trip Blank	✓											
BH2-1.4-1.5	✓	✓	✓				✓					

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

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CERTIFICATE OF ANALYSIS 260039-B

Client Details

Client	Douglas Partners Pty Ltd
Attention	Lisa Teng
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**99872.01, Marsden High School West Ryde**
Number of Samples	45 soil
Date samples received	21/01/2021
Date completed instructions received	02/02/2021

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	09/02/2021
Date of Issue	05/02/2021

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

Results Approved By
Ken Nguyen, Reporting Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

Client Reference: 99872.01, Marsden High School West Ryde

Metals in TCLP USEPA1311				
Our Reference		260039-B-4	260039-B-18	260039-B-21
Your Reference	UNITS	BH3	BH9	BH11
Depth		0-0.1	0-0.1	0-0.1
Date Sampled		18/01/2021	19/01/2021	18/01/2021
Type of sample		soil	soil	soil
Date extracted	-	04/02/2021	04/02/2021	04/02/2021
Date analysed	-	04/02/2021	04/02/2021	04/02/2021
pH of soil for fluid# determ.	pH units	9.0	8.3	9.2
pH of soil TCLP (after HCl)	pH units	1.8	1.7	1.9
Extraction fluid used	-	1	1	1
pH of final Leachate	pH units	5.2	5.0	5.3
Lead in TCLP	mg/L	[NA]	<0.03	[NA]
Nickel in TCLP	mg/L	0.02	[NA]	<0.02

Method ID	Methodology Summary
EXTRACT.7	Toxicity Characteristic Leaching Procedure (TCLP) using Zero Headspace Extraction (zHE) using AS4439 and USEPA 1311.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using in house method INORG-004. Please note that the mass used may be scaled down from the default based on sample mass available.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.

Client Reference: 99872.01, Marsden High School West Ryde

QUALITY CONTROL: Metals in TCLP USEPA1311					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			04/02/2021	[NT]	[NT]	[NT]	[NT]	04/02/2021	[NT]
Date analysed	-			04/02/2021	[NT]	[NT]	[NT]	[NT]	04/02/2021	[NT]
Lead in TCLP	mg/L	0.03	Metals-020 ICP-AES	<0.03	[NT]	[NT]	[NT]	[NT]	90	[NT]
Nickel in TCLP	mg/L	0.02	Metals-020 ICP-AES	<0.02	[NT]	[NT]	[NT]	[NT]	92	[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.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Ming To

From: Aileen Hie
Sent: Tuesday, 2 February 2021 1:25 PM
To: Ming To
Subject: FW: Additional TCLP

Ref: 260039-B
TAT: Standard
Due: 09/02/2021 MT

From: Lisa Teng <Lisa.Teng@douglaspartners.com.au>
Sent: Tuesday, 2 February 2021 1:19 PM
To: Aileen Hie <AHie@envirolab.com.au>
Subject: RE: Additional TCLP

Hi aileen,

Sorry – I must have quoted the interlab job number.

Correct job numbers are:
ELS 260039 Marsden High School
(4) - BH3/0-0.1 nickel TCLP
(16) - BH9/0-0.1 Lead TCLP
(21) - BH11/0-0.1 nickel TCLP

ELS 260173 Meadowbank Public School
- BH4/0.1-0.2 Nickel TCLP
- BH7/0.1-0.2 B(a)P TCLP
- BH11/0.9-1.0 B(a)P TCLP

Lisa Teng | Environmental Engineer
Douglas Partners Pty Ltd | ABN 75 053 980 117 | www.douglaspartners.com.au
96 Hermitage Road West Ryde NSW 2114 | PO Box 472 West Ryde NSW 1685
P: 02 9809 0666 | M: 0437 976 196 | E: Lisa.Teng@douglaspartners.com.au

CLIENT
2020 W

From: Aileen Hie <AHie@envirolab.com.au>
Sent: Tuesday, 2 February 2021 1:13 PM
To: Lisa Teng <Lisa.Teng@douglaspartners.com.au>
Subject: RE: Additional TCLP

D21/78776

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Lisa Teng
Client	DOUGLAS PARTNERS PTY LTD
Address	96 Hermitage Road West Ryde NSW 2114
Telephone	02 9809 0666
Facsimile	02 9809 4095
Email	lisa.teng@douglaspartners.com.au
Project	**99872.01 Marsden High School**
Order Number	(Not specified)
Samples	1

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE215773 R0**
Date Received	22 Jan 2021
Date Reported	01 Feb 2021

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Bennet LO
Senior Organic Chemist/Metals Chemis

Dong LIANG
Metals/Inorganics Team Leader

Ly Kim HA
Organic Section Head

Shane MCDERMOTT
Inorganic/Metals Chemist

Parameter	Units	LOR	Sample Number SE215773.001 Sample Matrix Soil Sample Date 19 Jan 2021 Sample Name BD6/20210119
VOC's in Soil Method: AN433 Tested: 28/1/2021			
Monocyclic Aromatic Hydrocarbons			
Benzene	mg/kg	0.1	<0.1
Toluene	mg/kg	0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2
o-xylene	mg/kg	0.1	<0.1
Polycyclic VOCs			
Naphthalene	mg/kg	0.1	<0.1
Surrogates			
d4-1,2-dichloroethane (Surrogate)	%	-	**83**
d8-toluene (Surrogate)	%	-	**91**
Bromofluorobenzene (Surrogate)	%	-	**67**
Totals			
Total Xylenes	mg/kg	0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6
Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 28/1/2021			
TRH C6-C10	mg/kg	25	<25
TRH C6-C9	mg/kg	20	<20
Surrogates			
d4-1,2-dichloroethane (Surrogate)	%	-	**83**
d8-toluene (Surrogate)	%	-	**91**
Bromofluorobenzene (Surrogate)	%	-	**67**

Parameter	Units	LOR	Sample Number SE215773.001 Sample Matrix Soil Sample Date 19 Jan 2021 Sample Name BD6/20210119
Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 28/1/2021 (continued)			
VPH F Bands			
Benzene (F0)	mg/kg	0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 28/1/2021			
TRH C10-C14	mg/kg	20	<20
TRH C15-C28	mg/kg	45	<45
TRH C29-C36	mg/kg	45	**55**
TRH C37-C40	mg/kg	100	<100
TRH C10-C36 Total	mg/kg	110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210
TRH F Bands			
TRH >C10-C16	mg/kg	25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 28/1/2021			
Naphthalene	mg/kg	0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1
Fluorene	mg/kg	0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1
Anthracene	mg/kg	0.1	<0.1
Fluoranthene	mg/kg	0.1	**0.1**
Pyrene	mg/kg	0.1	**0.1**
Benzo(a)anthracene	mg/kg	0.1	<0.1
Chrysene	mg/kg	0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8

Parameter	Units	LOR	Sample Number SE215773.001 Sample Matrix Soil Sample Date 19 Jan 2021 Sample Name BD6/20210119
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 28/1/2021 (continued)			
Surrogates			
d5-nitrobenzene (Surrogate)	%	-	**110**
2-fluorobiphenyl (Surrogate)	%	-	**89**
d14-p-terphenyl (Surrogate)	%	-	**93**
Speciated Phenols in Soil Method: AN420 Tested: 28/1/2021			
Phenol	mg/kg	0.5	<0.5
2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5
3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1
Total Cresol	mg/kg	1.5	<1.5
2-chlorophenol	mg/kg	0.5	<0.5
2,4-dimethylphenol	mg/kg	0.5	<0.5
2,6-dichlorophenol	mg/kg	0.5	<0.5
2,4-dichlorophenol	mg/kg	0.5	<0.5
2,4,6-trichlorophenol	mg/kg	0.5	<0.5
2-nitrophenol	mg/kg	0.5	<0.5
4-nitrophenol	mg/kg	1	<1
2,4,5-trichlorophenol	mg/kg	0.5	<0.5
2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	<1
Pentachlorophenol	mg/kg	0.5	<0.5
2,4-dinitrophenol	mg/kg	2	<2
4-chloro-3-methylphenol	mg/kg	2	<2
Surrogates			
2,4,6-Tribromophenol (Surrogate)	%	-	**86**
d5-phenol (Surrogate)	%	-	**81**
OC Pesticides in Soil Method: AN420 Tested: 28/1/2021			
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1
Lindane	mg/kg	0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1
Aldrin	mg/kg	0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2
Endrin	mg/kg	0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1
Isodrin	mg/kg	0.1	<0.1
Mirex	mg/kg	0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1

Parameter	Units	LOR	Sample Number SE215773.001 Sample Matrix Soil Sample Date 19 Jan 2021 Sample Name BD6/20210119
OC Pesticides in Soil Method: AN420 Tested: 28/1/2021 (continued)			
Surrogates			
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**87**
OP Pesticides in Soil Method: AN420 Tested: 28/1/2021			
Dichlorvos	mg/kg	0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2
Malathion	mg/kg	0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2
Methidathion	mg/kg	0.5	<0.5
Ethion	mg/kg	0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7
Surrogates			
2-fluorobiphenyl (Surrogate)	%	-	**89**
d14-p-terphenyl (Surrogate)	%	-	**93**
PCBs in Soil Method: AN420 Tested: 28/1/2021			
Arochlor 1016	mg/kg	0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1

Parameter	Units	LOR	Sample Number SE215773.001 Sample Matrix Soil Sample Date 19 Jan 2021 Sample Name BD6/20210119
PCBs in Soil Method: AN420 Tested: 28/1/2021 (continued)			
Surrogates			
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**87**
Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 28/1/2021			
Arsenic, As	mg/kg	1	**6**
Cadmium, Cd	mg/kg	0.3	<0.3
Chromium, Cr	mg/kg	0.5	**13**
Copper, Cu	mg/kg	0.5	**18**
Nickel, Ni	mg/kg	0.5	**7.5**
Lead, Pb	mg/kg	1	**32**
Zinc, Zn	mg/kg	2	**53**
Mercury in Soil Method: AN312 Tested: 28/1/2021			
Mercury	mg/kg	0.05	<0.05
Moisture Content Method: AN002 Tested: 28/1/2021			
% Moisture	%w/w	1	**15.5**

SGS

QC SUMMARY

SE215773 R0

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Mercury in Soil **Method: ME-(AU)-[ENV]AN312**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Mercury	LB217507	mg/kg	0.05	<0.05	0%	99%	89%

Moisture Content **Method: ME-(AU)-[ENV]AN002**

Parameter	QC Reference	Units	LOR	DUP %RPD
% Moisture	LB217482	%w/w	1	3 - 4%

OC Pesticides in Soil **Method: ME-(AU)-[ENV]AN420**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Hexachlorobenzene (HCB)	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
Alpha BHC	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
Lindane	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
Heptachlor	LB217481	mg/kg	0.1	<0.1	0%	70%	66%
Aldrin	LB217481	mg/kg	0.1	<0.1	0%	68%	64%
Beta BHC	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
Delta BHC	LB217481	mg/kg	0.1	<0.1	0%	69%	65%
Heptachlor epoxide	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
o,p'-DDE	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
Alpha Endosulfan	LB217481	mg/kg	0.2	<0.2	0%	NA	NA
Gamma Chlordane	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
Alpha Chlordane	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
trans-Nonachlor	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
p,p'-DDE	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
Dieldrin	LB217481	mg/kg	0.2	<0.2	0%	73%	69%
Endrin	LB217481	mg/kg	0.2	<0.2	0%	74%	70%
o,p'-DDD	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
o,p'-DDT	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
Beta Endosulfan	LB217481	mg/kg	0.2	<0.2	0%	NA	NA
p,p'-DDD	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
p,p'-DDT	LB217481	mg/kg	0.1	<0.1	0%	74%	62%
Endosulfan sulphate	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
Endrin Aldehyde	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
Methoxychlor	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
Endrin Ketone	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
Isodrin	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
Mirex	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
Total CLP OC Pesticides	LB217481	mg/kg	1	<1	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Tetrachloro-m-xylene (TCMX) (Surrogate)	LB217481	%	-	88%	1 - 8%	76%	77%

SGS

QC SUMMARY

SE215773 R0

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

OP Pesticides in Soil Method: ME-(AU)-[ENV]AN420

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Dichlorvos	LB217481	mg/kg	0.5	<0.5	0%	130%	115%
Dimethoate	LB217481	mg/kg	0.5	<0.5	0%	NA	NA
Diazinon (Dimpylate)	LB217481	mg/kg	0.5	<0.5	0%	98%	116%
Fenitrothion	LB217481	mg/kg	0.2	<0.2	0%	NA	NA
Malathion	LB217481	mg/kg	0.2	<0.2	0%	NA	NA
Chlorpyrifos (Chlorpyrifos Ethyl)	LB217481	mg/kg	0.2	<0.2	0%	91%	112%
Parathion-ethyl (Parathion)	LB217481	mg/kg	0.2	<0.2	0%	NA	NA
Bromophos Ethyl	LB217481	mg/kg	0.2	<0.2	0%	NA	NA
Methidathion	LB217481	mg/kg	0.5	<0.5	0%	NA	NA
Ethion	LB217481	mg/kg	0.2	<0.2	0%	91%	90%
Azinphos-methyl (Guthion)	LB217481	mg/kg	0.2	<0.2	0%	NA	NA
Total OP Pesticides*	LB217481	mg/kg	1.7	<1.7	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
2-fluorobiphenyl (Surrogate)	LB217481	%	-	94%	2 - 3%	92%	88%
d14-p-terphenyl (Surrogate)	LB217481	%	-	92%	2 - 3%	86%	83%

PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN420

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene	LB217481	mg/kg	0.1	<0.1	0%	94%	109%
2-methylnaphthalene	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
1-methylnaphthalene	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
Acenaphthylene	LB217481	mg/kg	0.1	<0.1	0%	96%	108%
Acenaphthene	LB217481	mg/kg	0.1	<0.1	0%	101%	106%
Fluorene	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
Phenanthrene	LB217481	mg/kg	0.1	<0.1	41 - 68%	95%	107%
Anthracene	LB217481	mg/kg	0.1	<0.1	0 - 7%	93%	104%
Fluoranthene	LB217481	mg/kg	0.1	<0.1	52 - 72%	92%	106%
Pyrene	LB217481	mg/kg	0.1	<0.1	45 - 71%	100%	105%
Benzo(a)anthracene	LB217481	mg/kg	0.1	<0.1	0 - 77%	NA	NA
Chrysene	LB217481	mg/kg	0.1	<0.1	4 - 89%	NA	NA
Benzo(b&j)fluoranthene	LB217481	mg/kg	0.1	<0.1	25 - 78%	NA	NA
Benzo(k)fluoranthene	LB217481	mg/kg	0.1	<0.1	0 - 25%	NA	NA
Benzo(a)pyrene	LB217481	mg/kg	0.1	<0.1	26 - 68%	110%	105%
Indeno(1,2,3-cd)pyrene	LB217481	mg/kg	0.1	<0.1	0 - 50%	NA	NA
Dibenzo(ah)anthracene	LB217481	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(ghi)perylene	LB217481	mg/kg	0.1	<0.1	0 - 49%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=0	LB217481	TEQ (mg/kg)	0.2	<0.2	0 - 60%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=LOR	LB217481	TEQ (mg/kg)	0.3	<0.3	0 - 44%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	LB217481	TEQ (mg/kg)	0.2	<0.2	0 - 66%	NA	NA
Total PAH (18)	LB217481	mg/kg	0.8	<0.8	20 - 102%	NA	NA
Total PAH (NEPM/WHO 16)	LB217481	mg/kg	0.8	<0.8			

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d5-nitrobenzene (Surrogate)	LB217481	%	-	92%	2 - 3%	90%	109%
2-fluorobiphenyl (Surrogate)	LB217481	%	-	94%	2 - 3%	92%	88%
d14-p-terphenyl (Surrogate)	LB217481	%	-	92%	2 - 3%	86%	83%

SGS

QC SUMMARY

SE215773 R0

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

PCBs in Soil **Method: ME-(AU)-[ENV]AN420**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arochlor 1016	LB217481	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1221	LB217481	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1232	LB217481	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1242	LB217481	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1248	LB217481	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1254	LB217481	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1260	LB217481	mg/kg	0.2	<0.2	0%	132%	120%
Arochlor 1262	LB217481	mg/kg	0.2	<0.2	0%	NA	NA
Arochlor 1268	LB217481	mg/kg	0.2	<0.2	0%	NA	NA
Total PCBs (Arochlors)	LB217481	mg/kg	1	<1	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Tetrachloro-m-xylene (TCMX) (Surrogate)	LB217481	%	-	88%	1 - 8%	76%	77%

Speciated Phenols in Soil **Method: ME-(AU)-[ENV]AN420**

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Phenol	LB217481	mg/kg	0.5	<0.5	92%
2-methyl phenol (o-cresol)	LB217481	mg/kg	0.5	<0.5	NA
3/4-methyl phenol (m/p-cresol)	LB217481	mg/kg	1	<1	NA
Total Cresol	LB217481	mg/kg	1.5	<1.5	NA
2-chlorophenol	LB217481	mg/kg	0.5	<0.5	NA
2,4-dimethylphenol	LB217481	mg/kg	0.5	<0.5	NA
2,6-dichlorophenol	LB217481	mg/kg	0.5	<0.5	NA
2,4-dichlorophenol	LB217481	mg/kg	0.5	<0.5	84%
2,4,6-trichlorophenol	LB217481	mg/kg	0.5	<0.5	84%
2-nitrophenol	LB217481	mg/kg	0.5	<0.5	NA
4-nitrophenol	LB217481	mg/kg	1	<1	NA
2,4,5-trichlorophenol	LB217481	mg/kg	0.5	<0.5	NA
2,3,4,6/2,3,5,6-tetrachlorophenol	LB217481	mg/kg	1	<1	NA
Pentachlorophenol	LB217481	mg/kg	0.5	<0.5	72%
2,4-dinitrophenol	LB217481	mg/kg	2	<2	NA
4-chloro-3-methylphenol	LB217481	mg/kg	2	<2	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
2,4,6-Tribromophenol (Surrogate)	LB217481	%	-	89%	91%
d5-phenol (Surrogate)	LB217481	%	-	92%	92%

SGS

QC SUMMARY

SE215773 R0

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES **Method: ME-(AU)-[ENV]AN040/AN320**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arsenic, As	LB217499	mg/kg	1	<1	3 - 12%	105%	85%
Cadmium, Cd	LB217499	mg/kg	0.3	<0.3	0%	93%	85%
Chromium, Cr	LB217499	mg/kg	0.5	<0.5	5 - 10%	100%	85%
Copper, Cu	LB217499	mg/kg	0.5	<0.5	1 - 2%	105%	85%
Nickel, Ni	LB217499	mg/kg	0.5	<0.5	1 - 7%	99%	71%
Lead, Pb	LB217499	mg/kg	1	<1	3 - 4%	103%	82%
Zinc, Zn	LB217499	mg/kg	2	<2.0	1 - 4%	100%	73%

TRH (Total Recoverable Hydrocarbons) in Soil **Method: ME-(AU)-[ENV]AN403**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH C10-C14	LB217481	mg/kg	20	<20	0%	93%	98%
TRH C15-C28	LB217481	mg/kg	45	<45	0%	85%	98%
TRH C29-C36	LB217481	mg/kg	45	<45	0%	73%	85%
TRH C37-C40	LB217481	mg/kg	100	<100	0%	NA	NA
TRH C10-C36 Total	LB217481	mg/kg	110	<110	0%	NA	NA
TRH >C10-C40 Total (F bands)	LB217481	mg/kg	210	<210	0%	NA	NA

TRH F Bands

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH >C10-C16	LB217481	mg/kg	25	<25	0%	90%	98%
TRH >C10-C16 - Naphthalene (F2)	LB217481	mg/kg	25	<25	0%	NA	NA
TRH >C16-C34 (F3)	LB217481	mg/kg	90	<90	0%	80%	95%
TRH >C34-C40 (F4)	LB217481	mg/kg	120	<120	0%	75%	NA

VOC's in Soil **Method: ME-(AU)-[ENV]AN433**

Monocyclic Aromatic Hydrocarbons

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene	LB217480	mg/kg	0.1	<0.1	0%	82%	64%
Toluene	LB217480	mg/kg	0.1	<0.1	0%	83%	65%
Ethylbenzene	LB217480	mg/kg	0.1	<0.1	0%	80%	66%
m/p-xylene	LB217480	mg/kg	0.2	<0.2	0%	80%	67%
o-xylene	LB217480	mg/kg	0.1	<0.1	0%	81%	67%

Polycyclic VOCs

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene	LB217480	mg/kg	0.1	<0.1	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d4-1,2-dichloroethane (Surrogate)	LB217480	%	-	109%	0 - 20%	104%	79%
d8-toluene (Surrogate)	LB217480	%	-	122%	1 - 20%	116%	85%
Bromofluorobenzene (Surrogate)	LB217480	%	-	108%	0 - 20%	91%	60%

Totals

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Total Xylenes	LB217480	mg/kg	0.3	<0.3	0%	NA	NA
Total BTEX	LB217480	mg/kg	0.6	<0.6	0%	NA	NA

QC SUMMARY

SE215773 R0

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Volatile Petroleum Hydrocarbons in Soil **Method: ME-(AU)-[ENV]AN433**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH C6-C10	LB217480	mg/kg	25	<25	0%	87%	64%
TRH C6-C9	LB217480	mg/kg	20	<20	0%	88%	66%

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d4-1,2-dichloroethane (Surrogate)	LB217480	%	-	109%	0 - 20%	104%	79%
d8-toluene (Surrogate)	LB217480	%	-	122%	1 - 20%	116%	85%
Bromofluorobenzene (Surrogate)	LB217480	%	-	108%	0 - 20%	91%	60%

VPH F Bands

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene (F0)	LB217480	mg/kg	0.1	<0.1	0%	NA	NA
TRH C6-C10 minus BTEX (F1)	LB217480	mg/kg	25	<25	0%	90%	62%

METHOD SUMMARY

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METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

FOOTNOTES

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FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	NATA accreditation does not cover the performance of this service.	QFH	QC result is above the upper tolerance
		QFL	QC result is below the lower tolerance
**	Indicative data, theoretical holding time exceeded.	-	The sample was not analysed for this analyte
***	Indicates that both * and ** apply.	NVL	Not Validated

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calcuated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

STATEMENT OF QA/QC PERFORMANCE

SE215773 R0

CLIENT DETAILS

Contact	Lisa Teng
Client	DOUGLAS PARTNERS PTY LTD
Address	96 Hermitage Road West Ryde NSW 2114
Telephone	02 9809 0666
Facsimile	02 9809 4095
Email	lisa.teng@douglaspartners.com.au
Project	**99872.01 Marsden High School**
Order Number	(Not specified)
Samples	1

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
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Telephone	+61 2 8594 0400
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Email	au.environmental.sydney@sgs.com
SGS Reference	**SE215773 R0**
Date Received	22 Jan 2021
Date Reported	01 Feb 2021

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Duplicate	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	5 items
Matrix Spike	VOC's in Soil	1 item

SAMPLE SUMMARY

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	Client	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	1 Soil
Date documentation received	22/1/2021	Type of documentation received	COC
Number of eskies/boxes received		Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	17°C
Sufficient sample for analysis	Yes	Turnaround time requested	Standard

HOLDING TIME SUMMARY

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SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BD6/20210119	SE215773.001	LB217507	19 Jan 2021	22 Jan 2021	16 Feb 2021	28 Jan 2021	16 Feb 2021	01 Feb 2021

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BD6/20210119	SE215773.001	LB217482	19 Jan 2021	22 Jan 2021	02 Feb 2021	28 Jan 2021	02 Feb 2021	01 Feb 2021

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BD6/20210119	SE215773.001	LB217481	19 Jan 2021	22 Jan 2021	02 Feb 2021	28 Jan 2021	09 Mar 2021	01 Feb 2021

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BD6/20210119	SE215773.001	LB217481	19 Jan 2021	22 Jan 2021	02 Feb 2021	28 Jan 2021	09 Mar 2021	01 Feb 2021

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BD6/20210119	SE215773.001	LB217481	19 Jan 2021	22 Jan 2021	02 Feb 2021	28 Jan 2021	09 Mar 2021	01 Feb 2021

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BD6/20210119	SE215773.001	LB217481	19 Jan 2021	22 Jan 2021	02 Feb 2021	28 Jan 2021	09 Mar 2021	01 Feb 2021

Speciated Phenols in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BD6/20210119	SE215773.001	LB217481	19 Jan 2021	22 Jan 2021	02 Feb 2021	28 Jan 2021	09 Mar 2021	01 Feb 2021

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BD6/20210119	SE215773.001	LB217499	19 Jan 2021	22 Jan 2021	18 Jul 2021	28 Jan 2021	18 Jul 2021	01 Feb 2021

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BD6/20210119	SE215773.001	LB217481	19 Jan 2021	22 Jan 2021	02 Feb 2021	28 Jan 2021	09 Mar 2021	01 Feb 2021

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BD6/20210119	SE215773.001	LB217480	19 Jan 2021	22 Jan 2021	02 Feb 2021	28 Jan 2021	09 Mar 2021	01 Feb 2021

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BD6/20210119	SE215773.001	LB217480	19 Jan 2021	22 Jan 2021	02 Feb 2021	28 Jan 2021	09 Mar 2021	01 Feb 2021

SURROGATES

SE215773 R0

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	BD6/20210119	SE215773.001	%	60 - 130%	87

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BD6/20210119	SE215773.001	%	60 - 130%	89
d14-p-terphenyl (Surrogate)	BD6/20210119	SE215773.001	%	60 - 130%	93

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BD6/20210119	SE215773.001	%	70 - 130%	89
d14-p-terphenyl (Surrogate)	BD6/20210119	SE215773.001	%	70 - 130%	93
d5-nitrobenzene (Surrogate)	BD6/20210119	SE215773.001	%	70 - 130%	110

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	BD6/20210119	SE215773.001	%	60 - 130%	87

Speciated Phenols in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2,4,6-Tribromophenol (Surrogate)	BD6/20210119	SE215773.001	%	70 - 130%	86
d5-phenol (Surrogate)	BD6/20210119	SE215773.001	%	50 - 130%	81

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BD6/20210119	SE215773.001	%	60 - 130%	67
d4-1,2-dichloroethane (Surrogate)	BD6/20210119	SE215773.001	%	60 - 130%	83
d8-toluene (Surrogate)	BD6/20210119	SE215773.001	%	60 - 130%	91

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BD6/20210119	SE215773.001	%	60 - 130%	67
d4-1,2-dichloroethane (Surrogate)	BD6/20210119	SE215773.001	%	60 - 130%	83
d8-toluene (Surrogate)	BD6/20210119	SE215773.001	%	60 - 130%	91

METHOD BLANKS

SE215773 R0

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB217507.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB217481.001		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Alpha BHC	mg/kg	0.1	<0.1
		Lindane	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		Endrin Aldehyde	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Endrin Ketone	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	88

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB217481.001		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	94
		d14-p-terphenyl (Surrogate)	%	-	92

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB217481.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.1	<0.1
	Anthracene	mg/kg	0.1	<0.1
	Fluoranthene	mg/kg	0.1	<0.1
	Pyrene	mg/kg	0.1	<0.1
	Benzo(a)anthracene	mg/kg	0.1	<0.1
	Chrysene	mg/kg	0.1	<0.1
	Benzo(a)pyrene	mg/kg	0.1	<0.1

SGS

METHOD BLANKS

SE215773 R0

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB217481.001		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	92
		2-fluorobiphenyl (Surrogate)	%	-	94
		d14-p-terphenyl (Surrogate)	%	-	92

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB217481.001		Arochlor 1016	mg/kg	0.2	<0.2
		Arochlor 1221	mg/kg	0.2	<0.2
		Arochlor 1232	mg/kg	0.2	<0.2
		Arochlor 1242	mg/kg	0.2	<0.2
		Arochlor 1248	mg/kg	0.2	<0.2
		Arochlor 1254	mg/kg	0.2	<0.2
		Arochlor 1260	mg/kg	0.2	<0.2
		Arochlor 1262	mg/kg	0.2	<0.2
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	88

Speciated Phenols in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB217481.001		Phenol	mg/kg	0.5	<0.5
		2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5
		3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1
		2-chlorophenol	mg/kg	0.5	<0.5
		2,4-dimethylphenol	mg/kg	0.5	<0.5
		2,6-dichlorophenol	mg/kg	0.5	<0.5
		2,4-dichlorophenol	mg/kg	0.5	<0.5
		2,4,6-trichlorophenol	mg/kg	0.5	<0.5
		2-nitrophenol	mg/kg	0.5	<0.5
		4-nitrophenol	mg/kg	1	<1
		2,4,5-trichlorophenol	mg/kg	0.5	<0.5
		2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	<1
		Pentachlorophenol	mg/kg	0.5	<0.5
		2,4-dinitrophenol	mg/kg	2	<2
		4-chloro-3-methylphenol	mg/kg	2	<2
	Surrogates	2,4,6-Tribromophenol (Surrogate)	%	-	89
		d5-phenol (Surrogate)	%	-	92

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB217499.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB217481.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR

METHOD BLANKS

SE215773 R0

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB217480.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	109
		d8-toluene (Surrogate)	%	-	122
		Bromofluorobenzene (Surrogate)	%	-	108
	Totals	Total BTEX	mg/kg	0.6	<0.6

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB217480.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	109

SGS

DUPLICATES

SE215773 R0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE215718A.011	LB217507.019	Mercury	mg/kg	0.05	0.0290127450	0.0306060606	198	0
SE215773.001	LB217507.014	Mercury	mg/kg	0.05	<0.05	<0.05	176	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE215870.001	LB217482.011	% Moisture	%w/w	1	15.2466367713	14.8391812865	37	3
SE215870.011	LB217482.022	% Moisture	%w/w	1	15.9183673469	15.2901785714	36	4
SE215870.012	LB217482.024	% Moisture	%w/w	1	17.0626349892	16.4727495407	36	4

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE215870.005	LB217481.031		Hexachlorobenzene (HCB)	mg/kg	0.1	0	0	200	0
			Alpha BHC	mg/kg	0.1	0	0	200	0
			Lindane	mg/kg	0.1	0	0	200	0
			Heptachlor	mg/kg	0.1	0	0	200	0
			Aldrin	mg/kg	0.1	0	0	200	0
			Beta BHC	mg/kg	0.1	0	0	200	0
			Delta BHC	mg/kg	0.1	0	0	200	0
			Heptachlor epoxide	mg/kg	0.1	0	0	200	0
			o,p'-DDE	mg/kg	0.1	0	0	200	0
			Alpha Endosulfan	mg/kg	0.2	0	0	200	0
			Gamma Chlordane	mg/kg	0.1	0	0	200	0
			Alpha Chlordane	mg/kg	0.1	0	0	200	0
			trans-Nonachlor	mg/kg	0.1	0	0	200	0
			p,p'-DDE	mg/kg	0.1	0	0	200	0
			Dieldrin	mg/kg	0.2	0	0	200	0
			Endrin	mg/kg	0.2	0	0	200	0
			o,p'-DDD	mg/kg	0.1	0	0	200	0
			o,p'-DDT	mg/kg	0.1	0	0	200	0
			Beta Endosulfan	mg/kg	0.2	0	0	200	0
			p,p'-DDD	mg/kg	0.1	0	0	200	0
			p,p'-DDT	mg/kg	0.1	0.0239993128	0.0241044557	200	0
			Endosulfan sulphate	mg/kg	0.1	0	0	200	0
			Endrin Aldehyde	mg/kg	0.1	0	0	200	0
			Methoxychlor	mg/kg	0.1	0	0.0016084008	200	0
			Endrin Ketone	mg/kg	0.1	0	0	200	0
			Isodrin	mg/kg	0.1	0	0	200	0
			Mirex	mg/kg	0.1	0	0	200	0
			Total CLP OC Pesticides	mg/kg	1	0	0.0016084008	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.1336936972	0.1228423710	30	8
SE215870.009	LB217481.028		Hexachlorobenzene (HCB)	mg/kg	0.1	0	0	200	0
			Alpha BHC	mg/kg	0.1	0	0	200	0
			Lindane	mg/kg	0.1	0	0	200	0
			Heptachlor	mg/kg	0.1	0	0	200	0
			Aldrin	mg/kg	0.1	0	0	200	0
			Beta BHC	mg/kg	0.1	0	0	200	0
			Delta BHC	mg/kg	0.1	0	0	200	0
			Heptachlor epoxide	mg/kg	0.1	0	0	200	0
			o,p'-DDE	mg/kg	0.1	0	0	200	0
			Alpha Endosulfan	mg/kg	0.2	0	0	200	0
			Gamma Chlordane	mg/kg	0.1	0	0	200	0
			Alpha Chlordane	mg/kg	0.1	0	0	200	0
			trans-Nonachlor	mg/kg	0.1	0	0	200	0
			p,p'-DDE	mg/kg	0.1	0	0	200	0
			Dieldrin	mg/kg	0.2	0	0	200	0
			Endrin	mg/kg	0.2	0	0	200	0
			o,p'-DDD	mg/kg	0.1	0	0	200	0
			o,p'-DDT	mg/kg	0.1	0	0	200	0
			Beta Endosulfan	mg/kg	0.2	0	0	200	0
			p,p'-DDD	mg/kg	0.1	0	0	200	0

DUPLICATES

SE215773 R0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

OC Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE215870.009	LB217481.028		p,p'-DDT	mg/kg	0.1	0	0.0141283408	200	0
			Endosulfan sulphate	mg/kg	0.1	0	0	200	0
			Endrin Aldehyde	mg/kg	0.1	0	0	200	0
			Methoxychlor	mg/kg	0.1	0.0011188278	0	200	0
			Endrin Ketone	mg/kg	0.1	0	0	200	0
			Isodrin	mg/kg	0.1	0	0	200	0
			Mirex	mg/kg	0.1	0	0	200	0
			Total CLP OC Pesticides	mg/kg	1	0.0011188278	0	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.12801410300	.1272970181	30	1

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE215870.006	LB217481.030		Dichlorvos	mg/kg	0.5	0	0	200	0
			Dimethoate	mg/kg	0.5	0.00089878500	.0038701271	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	0.0762789876	0	200	0
			Fenitrothion	mg/kg	0.2	0.0065010355	0	200	0
			Malathion	mg/kg	0.2	0	0	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	0	0	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	0.0425072763	0	200	0
			Bromophos Ethyl	mg/kg	0.2	0	0	200	0
			Methidathion	mg/kg	0.5	0.0044812617	0	200	0
			Ethion	mg/kg	0.2	0.0151014937	0	200	0
			Azinphos-methyl (Guthion)	mg/kg	0.2	0	0	200	0
			Total OP Pesticides*	mg/kg	1.7	0	0	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.42507963840	.4332791757	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.41979833140	.4284916685	30	2
SE215870.009	LB217481.028		Dichlorvos	mg/kg	0.5	0.0018753432	0	200	0
			Dimethoate	mg/kg	0.5	0	0	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	0	0	200	0
			Fenitrothion	mg/kg	0.2	0.0038138172	0	200	0
			Malathion	mg/kg	0.2	0	0	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	0	0	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	0	0.0078060569	200	0
			Bromophos Ethyl	mg/kg	0.2	0.0891655831	0	200	0
			Methidathion	mg/kg	0.5	0	0	200	0
			Ethion	mg/kg	0.2	0	0.0360758063	200	0
			Azinphos-methyl (Guthion)	mg/kg	0.2	0.0012775657	0	200	0
			Total OP Pesticides*	mg/kg	1.7	0	0	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.45316986010	.4398233860	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.44056393160	.4284214815	30	3

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE215870.006	LB217481.030	Naphthalene	mg/kg	0.1	0	0.0198512377	200	0
		2-methylnaphthalene	mg/kg	0.1	0.00365383400	.0111271261	200	0
		1-methylnaphthalene	mg/kg	0.1	0.00405524790	.0108166183	200	0
		Acenaphthylene	mg/kg	0.1	0.00579971880	.0141446806	200	0
		Acenaphthene	mg/kg	0.1	0.00526482600	.0103611846	200	0
		Fluorene	mg/kg	0.1	0.01175821980	.0232888238	200	0
		Phenanthrene	mg/kg	0.1	0.08337637540	.1512372476	115	41
		Anthracene	mg/kg	0.1	0.07803090740	.0471512201	190	0
		Fluoranthene	mg/kg	0.1	0.17888342290	.3031657959	71	52
		Pyrene	mg/kg	0.1	0.18523588290	.2942745303	72	45
		Benzo(a)anthracene	mg/kg	0.1	0.05220035090	.0989660467	162	0
		Chrysene	mg/kg	0.1	0.05602778950	.1043255056	155	4
		Benzo(b&j)fluoranthene	mg/kg	0.1	0.06756914340	.1291174456	132	25
		Benzo(k)fluoranthene	mg/kg	0.1	0.03692915640	.0618303938	200	0
		Benzo(a)pyrene	mg/kg	0.1	0.07628846940	.1292373379	127	26
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.04639580680	.0782285394	190	0
		Dibenzo(ah)anthracene	mg/kg	0.1	0.00691051910	.0115023065	200	0
		Benzo(ghi)perylene	mg/kg	0.1	0.04467548550	.0801877550	190	0
		Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	0	0.1302805930	200	0

SGS

DUPLICATES

SE215773 R0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE215870.006	LB217481.030		Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	0.242	0.2712805930	127	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	0.121	0.2007805930	134	0
			Total PAH (18)	mg/kg	0.8	0.3641193058	0.3822404174	149	20
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5309279001	0.5440434722	30	2
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4250796384	0.4332791757	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4197983314	0.4284916685	30	2
SE215870.009	LB217481.028		Naphthalene	mg/kg	0.1	0.011879242	0.0117404831	200	0
			2-methylnaphthalene	mg/kg	0.1	0.009148948	0.0074071857	200	0
			1-methylnaphthalene	mg/kg	0.1	0.011730618	0.0080987377	200	0
			Acenaphthylene	mg/kg	0.1	0.012752962	0.0076158583	200	0
			Acenaphthene	mg/kg	0.1	0.021616379	0.0117762063	200	0
			Fluorene	mg/kg	0.1	0.043974085	0.0246019232	200	0
			Phenanthrene	mg/kg	0.1	0.335471653	0.1655122640	70	68
			Anthracene	mg/kg	0.1	0.107361768	0.0533286714	154	7
			Fluoranthene	mg/kg	0.1	0.793274310	0.3747459094	47	72 ②
			Pyrene	mg/kg	0.1	0.797001698	0.3783485697	47	71 ②
			Benzo(a)anthracene	mg/kg	0.1	0.225981664	0.0971069308	92	77
			Chrysene	mg/kg	0.1	0.275365539	0.1051513341	83	89 ③
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.312390159	0.1365200893	75	78 ③
			Benzo(k)fluoranthene	mg/kg	0.1	0.128454581	0.0653318412	133	25
			Benzo(a)pyrene	mg/kg	0.1	0.283635501	0.1393651410	77	68
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.167215782	0.0784773652	111	50
			Dibenzo(ah)anthracene	mg/kg	0.1	0.031965287	0.0119736711	200	0
			Benzo(ghi)perylene	mg/kg	0.1	0.165130003	0.0755555065	113	49
			Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	0.370430031	0.1404166543	88	60
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	0.470430031	0.2814166543	90	44
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	0.420430031	0.2109166543	73	66
			Total PAH (18)	mg/kg	0.8	3.581111727	1.1631232183	64	102 ②
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.573004947	0.5540397505	30	3
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.453169860	0.4398233860	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.440563931	0.4284214815	30	3

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE215870.005	LB217481.031		Arochlor 1016	mg/kg	0.2	0	0	200	0
			Arochlor 1221	mg/kg	0.2	0	0	200	0
			Arochlor 1232	mg/kg	0.2	0	0	200	0
			Arochlor 1242	mg/kg	0.2	0	0	200	0
			Arochlor 1248	mg/kg	0.2	0	0	200	0
			Arochlor 1254	mg/kg	0.2	0	0	200	0
			Arochlor 1260	mg/kg	0.2	0.0128232033	0	200	0
			Arochlor 1262	mg/kg	0.2	0	0	200	0
			Arochlor 1268	mg/kg	0.2	0	0	200	0
			Total PCBs (Arochlors)	mg/kg	1	0.0128232033	0	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.1336936972	0.1228423710	30	8
SE215870.009	LB217481.028		Arochlor 1016	mg/kg	0.2	0	0	200	0
			Arochlor 1221	mg/kg	0.2	0	0	200	0
			Arochlor 1232	mg/kg	0.2	0	0	200	0
			Arochlor 1242	mg/kg	0.2	0	0	200	0
			Arochlor 1248	mg/kg	0.2	0	0	200	0
			Arochlor 1254	mg/kg	0.2	0	0	200	0
			Arochlor 1260	mg/kg	0.2	0.0149096333	0.0234599868	200	0
			Arochlor 1262	mg/kg	0.2	0	0	200	0
			Arochlor 1268	mg/kg	0.2	0	0	200	0
			Total PCBs (Arochlors)	mg/kg	1	0.0149096333	0.0234599868	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.1280141030	0.1272970181	30	1

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate		Parameter	Units	LOR

SGS

DUPLICATES

SE215773 R0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

Total Recoverable Elements In Soil/Waste Solids/Materials by ICPOES (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE215718A.011	LB217499.019		Arsenic, As	mg/kg	1	0.842373949	51.1276942148	132	12
			Cadmium, Cd	mg/kg	0.3	0.000848739	40.0020867768	200	0
			Chromium, Cr	mg/kg	0.5	2.35779831	932.4770041322	51	5
			Copper, Cu	mg/kg	0.5	8.01761764	708.2043719008	36	2
			Nickel, Ni	mg/kg	0.5	0.82327731	090.8839586776	89	7
			Lead, Pb	mg/kg	1	5.98997899	156.1902148760	46	3
			Zinc, Zn	mg/kg	2	7.40143277	317.6935289256	56	4
SE215773.001	LB217499.014		Arsenic, As	mg/kg	1	6	6	47	3
			Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
			Chromium, Cr	mg/kg	0.5	13	15	34	10
			Copper, Cu	mg/kg	0.5	18	18	33	1
			Nickel, Ni	mg/kg	0.5	7.5	7.5	37	1
			Lead, Pb	mg/kg	1	32	33	33	4
			Zinc, Zn	mg/kg	2	53	54	34	1

TRH (Total Recoverable Hydrocarbons) In Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE215870.006	LB217481.030		TRH C10-C14	mg/kg	20	0	0	200	0
			TRH C15-C28	mg/kg	45	0	0	200	0
			TRH C29-C36	mg/kg	45	0	0	200	0
			TRH C37-C40	mg/kg	100	0	0	200	0
			TRH C10-C36 Total	mg/kg	110	0	0	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	0	0	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	0	0	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	0	0	200	0
			TRH >C16-C34 (F3)	mg/kg	90	0	0	200	0
			TRH >C34-C40 (F4)	mg/kg	120	0	0	200	0
SE215870.009	LB217481.028		TRH C10-C14	mg/kg	20	0	0	200	0
			TRH C15-C28	mg/kg	45	0	0	200	0
			TRH C29-C36	mg/kg	45	0	0	200	0
			TRH C37-C40	mg/kg	100	0	0	200	0
			TRH C10-C36 Total	mg/kg	110	0	0	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	0	0	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	0	0	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	0	0	200	0
			TRH >C16-C34 (F3)	mg/kg	90	0	0	200	0
			TRH >C34-C40 (F4)	mg/kg	120	0	0	200	0

VOC's In Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE215870.006	LB217480.014	Monocyclic Aromatic	Benzene	mg/kg	0.1	0	0	200	0
			Toluene	mg/kg	0.1	0.004866552	00.0041403984	200	0
			Ethylbenzene	mg/kg	0.1	0.001620467	10.0016004093	200	0
			m/p-xylene	mg/kg	0.2	0.003339621	60.0030971507	200	0
			o-xylene	mg/kg	0.1	0.001244485	30.0009035786	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	0.001822857	80.0020668224	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.12986773	038.3295910193	50	20
			d8-toluene (Surrogate)	mg/kg	-	11.10107511	949.1152969537	50	20
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.150296435	36.6569964138	50	20
		Totals	Total Xylenes	mg/kg	0.3	0.004584107	00.0040007294	200	0
			Total BTEX	mg/kg	0.6	0	0	200	0
SE215870.010	LB217480.019	Monocyclic Aromatic	Benzene	mg/kg	0.1	0	0	200	0
			Toluene	mg/kg	0.1	0.004016666	20.0039552503	200	0
			Ethylbenzene	mg/kg	0.1	0.001460621	40.0014435810	200	0
			m/p-xylene	mg/kg	0.2	0.003021257	00.0029739994	200	0
			o-xylene	mg/kg	0.1	0.000918280	50.0008509228	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	0.002087680	20.0018212758	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.403364122	29.3800307901	50	0
			d8-toluene (Surrogate)	mg/kg	-	10.16619728	5710.309139149	50	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.59292187	527.6084561216	50	0
		Totals	Total Xylenes	mg/kg	0.3	0.003939376	00.0038249222	200	0
			Total BTEX	mg/kg	0.6	0	0	200	0

DUPLICATES

SE215773 R0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE215870.006	LB217480.014		TRH C6-C10	mg/kg	25	0	0	200	0
			TRH C6-C9	mg/kg	20	0	0	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.1298677303	8.3295910193	30	20
			d8-toluene (Surrogate)	mg/kg	-	11.1010751194	9.1152969537	30	20
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.1502964353	6.6569964138	30	20
		VPH F Bands	Benzene (F0)	mg/kg	0.1	0	0	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	0	0	200	0
SE215870.010	LB217480.019		TRH C6-C10	mg/kg	25	0	0	200	0
			TRH C6-C9	mg/kg	20	0	0	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.4033641222	9.3800307901	30	0
			d8-toluene (Surrogate)	mg/kg	-	10.1661972857	10.3091391493	30	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.5929218752	7.6084561216	30	0
		VPH F Bands	Benzene (F0)	mg/kg	0.1	0	0	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	0	0	200	0

SGS

LABORATORY CONTROL SAMPLES

SE215773 R0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB217507.002	Mercury	mg/kg	0.05	0.20	0.2	70 - 130	99

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB217481.002		Heptachlor	mg/kg	0.1	0.1	0.2	60 - 140	70
		Aldrin	mg/kg	0.1	0.1	0.2	60 - 140	68
		Delta BHC	mg/kg	0.1	0.1	0.2	60 - 140	69
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	73
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	74
		p,p'-DDT	mg/kg	0.1	0.1	0.2	60 - 140	74
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.11	0.15	40 - 130	76

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB217481.002		Dichlorvos	mg/kg	0.5	2.6	2	60 - 140	130
		Diazinon (Dimpylate)	mg/kg	0.5	2.0	2	60 - 140	98
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	2	60 - 140	91
		Ethion	mg/kg	0.2	1.8	2	60 - 140	91
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	92
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	86

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB217481.002		Naphthalene	mg/kg	0.1	3.8	4	60 - 140	94
		Acenaphthylene	mg/kg	0.1	3.8	4	60 - 140	96
		Acenaphthene	mg/kg	0.1	4.1	4	60 - 140	101
		Phenanthrene	mg/kg	0.1	3.8	4	60 - 140	95
		Anthracene	mg/kg	0.1	3.7	4	60 - 140	93
		Fluoranthene	mg/kg	0.1	3.7	4	60 - 140	92
		Pyrene	mg/kg	0.1	4.0	4	60 - 140	100
		Benzo(a)pyrene	mg/kg	0.1	4.4	4	60 - 140	110
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	90
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	92
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	86

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB217481.002	Arochlor 1260	mg/kg	0.2	0.5	0.4	60 - 140	132

Speciated Phenols in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB217481.002		Phenol	mg/kg	0.5	0.9	1	70 - 130	92
		2,4-dichlorophenol	mg/kg	0.5	0.8	1	70 - 130	84
		2,4,6-trichlorophenol	mg/kg	0.5	0.8	1	70 - 130	84
		Pentachlorophenol	mg/kg	0.5	0.7	1	70 - 130	72
	Surrogates	2,4,6-Tribromophenol (Surrogate)	mg/kg	-	4.6	5	40 - 130	91
		d5-phenol (Surrogate)	mg/kg	-	1.8	2	40 - 130	92

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB217499.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	105
	Cadmium, Cd	mg/kg	0.3	5.0	5.41	80 - 120	93
	Chromium, Cr	mg/kg	0.5	38	38.31	80 - 120	100
	Copper, Cu	mg/kg	0.5	300	290	80 - 120	105
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	99
	Lead, Pb	mg/kg	1	93	89.9	80 - 120	103
	Zinc, Zn	mg/kg	2	270	273	80 - 120	100

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR

LABORATORY CONTROL SAMPLES

SE215773 R0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB217481.002		TRH C10-C14	mg/kg	20	37	40	60 - 140	93
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	85
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	73
	TRH F Bands	TRH >C10-C16	mg/kg	25	36	40	60 - 140	90
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	80
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	75

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB217480.002	Monocyclic	Benzene	mg/kg	0.1	4.1	5	60 - 140	82
	Aromatic	Toluene	mg/kg	0.1	4.2	5	60 - 140	83
		Ethylbenzene	mg/kg	0.1	4.0	5	60 - 140	80
		m/p-xylene	mg/kg	0.2	8.0	10	60 - 140	80
		o-xylene	mg/kg	0.1	4.0	5	60 - 140	81
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.4	10	70 - 130	104
		d8-toluene (Surrogate)	mg/kg	-	11.6	10	70 - 130	116
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.1	10	70 - 130	91

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB217480.002		TRH C6-C10	mg/kg	25	81	92.5	60 - 140	87
		TRH C6-C9	mg/kg	20	71	80	60 - 140	88
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.4	10	70 - 130	104
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.1	10	70 - 130	91
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	57	62.5	60 - 140	90

SGS

MATRIX SPIKES

SE215773 R0

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE215752.001	LB217507.004	Mercury	mg/kg	0.05	0.18	<0.05	0.2	89

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE215752.001	LB217481.004		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor	mg/kg	0.1	0.1	<0.1	0.2	66
			Aldrin	mg/kg	0.1	0.1	<0.1	0.2	64
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.1	<0.1	0.2	65
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	69
			Endrin	mg/kg	0.2	<0.2	<0.2	0.2	70
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	-	-
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDT	mg/kg	0.1	0.1	<0.1	0.2	62
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	<1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.11	0.12	-	77

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE215752.001	LB217481.004		Dichlorvos	mg/kg	0.5	2.3	<0.5	2	115
			Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
			Diazinon (Dimpylate)	mg/kg	0.5	2.3	<0.5	2	116
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
			Malathion	mg/kg	0.2	<0.2	<0.2	-	-
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	2.2	<0.2	2	112
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
			Methidathion	mg/kg	0.5	<0.5	<0.5	-	-
			Ethion	mg/kg	0.2	1.8	<0.2	2	90
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
			Total OP Pesticides*	mg/kg	1.7	8.7	<1.7	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	88
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	83

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE215752.001	LB217481.004	Naphthalene	mg/kg	0.1	4.4	<0.1	4	109
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Acenaphthylene	mg/kg	0.1	4.3	<0.1	4	108
		Acenaphthene	mg/kg	0.1	4.3	<0.1	4	106
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
		Phenanthrene	mg/kg	0.1	4.3	<0.1	4	107

SGS

MATRIX SPIKES

SE215773 R0

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE215752.001	LB217481.004		Anthracene	mg/kg	0.1	4.2	<0.1	4	104
			Fluoranthene	mg/kg	0.1	4.2	<0.1	4	106
			Pyrene	mg/kg	0.1	4.2	<0.1	4	105
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Chrysene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(a)pyrene	mg/kg	0.1	4.2	<0.1	4	105
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	-	-
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	4.2	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	4.4	<0.3	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	4.3	<0.2	-	-
			Total PAH (18)	mg/kg	0.8	34	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.6	-	109
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	88
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	83

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE215752.001	LB217481.004		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1260	mg/kg	0.2	0.5	<0.2	0.4	120
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	-	-
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	-	77

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE215752.001	LB217499.004	Arsenic, As	mg/kg	1	44	2	50	85
		Cadmium, Cd	mg/kg	0.3	43	<0.3	50	85
		Chromium, Cr	mg/kg	0.5	51	9.1	50	85
		Copper, Cu	mg/kg	0.5	45	2.7	50	85
		Nickel, Ni	mg/kg	0.5	50	14	50	71
		Lead, Pb	mg/kg	1	48	7	50	82
		Zinc, Zn	mg/kg	2	68	31	50	73

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE215752.001	LB217481.004		TRH C10-C14	mg/kg	20	39	<20	40	98
			TRH C15-C28	mg/kg	45	<45	<45	40	98
			TRH C29-C36	mg/kg	45	<45	<45	40	85
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	<110	<110	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F Bands	TRH >C10-C16	mg/kg	25	39	<25	40	98
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	35	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	95
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE215752.001	LB217480.004	Monocyclic	Benzene	mg/kg	0.1	3.2	<0.1	5	64
		Aromatic	Toluene	mg/kg	0.1	3.3	<0.1	5	65
			Ethylbenzene	mg/kg	0.1	3.3	<0.1	5	66
			m/p-xylene	mg/kg	0.2	6.7	<0.2	10	67
			o-xylene	mg/kg	0.1	3.4	<0.1	5	67

MATRIX SPIKES

SE215773 R0

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE215752.001	LB217480.004	Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	9.5	10	79
			d8-toluene (Surrogate)	mg/kg	-	8.5	9.2	10	85
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.0	11.0	10	60 ①
		Totals	Total Xylenes	mg/kg	0.3	10	<0.3	-	-
			Total BTEX	mg/kg	0.6	20	<0.6	-	-

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE215752.001	LB217480.004		TRH C6-C10	mg/kg	25	59	<25	92.5	64
			TRH C6-C9	mg/kg	20	53	<20	80	66
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	9.5	10	79
			d8-toluene (Surrogate)	mg/kg	-	8.5	9.2	10	85
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.0	11.0	-	60
		VPH F	Benzene (F0)	mg/kg	0.1	3.2	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	39	<25	62.5	62

MATRIX SPIKE DUPLICATES

SE215773 R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

FOOTNOTES

SE215773 R0

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here: https://www.sgs.com.au/~/media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
***	Indicates that both * and ** apply.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.

①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

D21/78776

Douglas Partners
Geotechnics | Environment | Groundwater

F.14 - CHAIN OF CUSTODY DESPATCH SHEET

Project No:	99872.01	**Suburb:**	West Ryde	**To:**	Envirolab Services Pty Ltd
Project Name:	Marsden High School	**Order Number**			12 Ashley Street, Chatswood, NSW 2067
Project Manager:	Lisa Teng	**Sampler:**	TM	**Attn:**	Aileen Hie
Emails:	isa.Teng@douglaspartners.com.a			**Phone:**	
Date Required:	Standard ☐			**Email:**	Ahie@envirolab.com.au

Prior Storage: Fridge/freezer Do samples contain 'potential' HBM? No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)

Sample ID	Depth Range	Lab ID	Date Sampled	Sample Type: S - soil W - water	Container Type: G - glass P - plastic	Analytes: COMBO 8A	COMBO 3A	COMBO 3	pH and CEC	hold	TRH BTEX	Combo 8			Notes/preservation
BH16	0-0.1	30	19/01/21	S	G	x									
BH16	0.9-1.0	31	19/01/21	S	G					X					
BH17	0.4-0.5	32	19/01/21	S	G	X									
BH18	0-0.1	33	19/01/21	S	G		x								
BH19	0.4-0.5	34	18/01/21	S	G	X									
BH19	1.4-1.5	35	18/01/21	S	G										
BH20	0-0.1	36	18/01/21	S	G	x									
BH21	0-0.1	37	19/01/21	S	G	X									
BH22	0.4-0.5	38	18/01/21	S	G		x								
BH23	0.4-0.5	39	19/01/21	S	G		x								
BD1/20210118	-	40	18/01/21	S	G							x			
BD10/20210119	-	41	19/01/21	S	G			x							
BD2/20210118	-	42	18/01/21	S	G			x							
BD6/20210119	-		19/01/21	S	G							x			**SEND AS INTERLAB TO SGS**
Trip Spike		43	18-19/01/21	S	G						x				
PQL (S) mg/k															**ANZECC PQLs req'd for all water analytes** ☐

Relinquished by EHS SGC
Meylem
22/1/21 9:00 am

SGS EHS Sydney COC
SE215773

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 260039
Date Received: 21/01/21
Time Received: 16:40
Received By:
Temp: Cool/Ambient
Cooling: Ice/icepack
Security: Intact/Broken/None

PQL = practical quantitation limit. If none given, default to Laboratory Method Detection Limit

Metals to Analyse: 8HM unless specified here:

Lab Report/Reference No:

Total number of samples in container: **Relinquished by:** **Transported to laboratory by:**

Send Results to: Douglas Partners Pty Ltd **Address:** **Phone:** **Fax:**

Signed: **Received by:** Envirolab HM **Date & Time:** 21/01/21 16:40

Received by: George Zhi 22/1/21 @ 3:35pm

D21/78776

SAMPLE RECEIPT ADVICE

SE215773

CLIENT DETAILS

Contact	Lisa Teng
Client	DOUGLAS PARTNERS PTY LTD
Address	96 Hermitage Road West Ryde NSW 2114
Telephone	02 9809 0666
Facsimile	02 9809 4095
Email	lisa.teng@douglaspartners.com.au
Project	**99872.01 Marsden High School**
Order Number	(Not specified)
Samples	1

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Fri 22/1/2021
Report Due	Mon 1/2/2021
SGS Reference	**SE215773**

SUBMISSION DETAILS

This is to confirm that 1 sample was received on Friday 22/1/2021. Results are expected to be ready by COB Monday 1/2/2021. Please quote SGS reference SE215773 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	Client	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	1 Soil
Date documentation received	22/1/2021	Type of documentation received	COC
Number of eskies/boxes received		Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	17°C
Sufficient sample for analysis	Yes	Turnaround time requested	Standard

Unless otherwise instructed, water and bulk samples will be held for one month from date of report, and soil samples will be held for two months.

COMMENTS

SAMPLE RECEIPT ADVICE

SE215773

CLIENT DETAILS

Client DOUGLAS PARTNERS PTY LTD

Project 99872.01 Marsden High School

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	Speciated Phenols in Soil	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	BD6/20210119	29	14	26	11	18	10	11	7

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .

SAMPLE RECEIPT ADVICE

SE215773

CLIENT DETAILS

Client DOUGLAS PARTNERS PTY LTD

Project 99872.01 Marsden High School

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury in Soil	Moisture Content	Total Recoverable Elements in Soil/Waste
001	BD6/20210119	1	1	7

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .