Douglas Partners
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Integrated Practical Solutions

Report on
Detailed Site Investigation (Contamination)

Carlingford West Public School
59-73 Felton Road and part of 183 Pennant Hills Road, Carlingford

Prepared for
Taylor Construction Pty Ltd

Project 86976.01
June 2021

Douglas Partners
Geotechnics / Environment / Groundwater

Document History

Document details

Project No.	86976.01	Document No.	R.001.Rev6
Document title	Report on Detailed Site Investigation (Contamination) Carlingford West Public School		
Site address	59-73 Felton Road and part of 183 Pennant Hills Road, Carlingford		
Report prepared for	Taylor Construction Pty Ltd		
File name	86976.01.R.001.Rev6		

Document status and review

Status	Prepared by	Reviewed by	Date issued
Draft A	Lisa Teng	J.M Nash	07 May 2021
Revision 0	Lisa Teng	J.M Nash	11 May 2021
Revision 1	Lisa Teng	J.M Nash	13 May 2021
Revision 2	Lisa Teng	J.M Nash	20 May 2021
Revision 3	Lisa Teng	Paul Gorman	24 May 2021
Revision 4	Lisa Teng	Paul Gorman	02 June 2021
Revision 5	Lisa Teng	Paul Gorman	23 June 2021
Revision 6	Lisa Teng	J.M. Nash	24 June 2021

Distribution of copies

Status	Electronic	Paper	Issued to
Draft A	1	-	Gary Shaw, Taylor Construction Pty Ltd
Revision 0	1	-	Gary Shaw, Taylor Construction Pty Ltd
Revision 1	1	-	Gary Shaw, Taylor Construction Pty Ltd
Revision 2	1	-	Gary Shaw, Taylor Construction Pty Ltd
Revision 3	1	-	Gary Shaw, Taylor Construction Pty Ltd
Revision 4	1	-	Gary Shaw, Taylor Construction Pty Ltd
Revision 5	1	-	Gary Shaw, Taylor Construction Pty Ltd
Revision 6	1	-	Gary Shaw, Taylor Construction Pty Ltd

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

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bsi. ISO 9001 Quality Management
FS 604853

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Executive Summary

The following report comprises a Detailed Site Investigation conducted at the proposed development at Carlingford West Public School ('CWPS') located at Felton Road, Carlingford by Douglas Partners Pty Ltd (DP). The report was commissioned by Taylor Construction Pty Ltd. The site comprises parts of CWPS and the northern most oval of Cumberland High School ('CHS') (which is used by CWPS), which are proposed to be redeveloped as part of a state significant development (SSD) of CWPS. The purpose of the report is to assess the suitability of the site for the proposed development and whether further investigation and / or management is required.

The investigation comprised a review of previous preliminary site (contamination) investigations carried out at CWPS and CHS by Douglas Partners, the drilling of 14 boreholes (303 - 313 and 318), the excavation of 12 test pits (314 - 317 and 319 - 326), analysis of samples at a National Association of Testing Authorities (NATA) accredited laboratory and preparation of this report.

The proposed development at the site generally comprises refurbishment of existing buildings, additions to Block A, three new buildings (Block J, X and Y), pedestrian connections across the site, a new carpark and temporary school site.

Geologically, the site is underlain by Hawkesbury Sandstone and Ashfield Shale often with erosional and residual soil layers above, with very low risk to be impacted by acid sulfate soils and high salinity. The site history indicates the site likely to be used for agriculture prior to being developed into schools in the 1960s. The most significant risks associated with contamination were considered to be imported fill, previous site uses impacting fill / surficial soils and the risk associated with the demolition / renovation of previous / existing buildings impacting fill / surficial soil. It was noted that the mound along the northern boundary was suspected to have asbestos containing materials according to the Principal of CWPS.

A total of 43 soil samples were selected for analysis with 37 samples analysed from fill and 6 from natural, given that field observations and site history suggested that contain likely to be associated with fill than natural soils. Samples were analysed for the primary contaminants of potential concern including heavy metals, TRH, BTEX, PAH, and asbestos, with a smaller number were also analysed for OCP, OPP, PCB phenols, herbicides and for site specific data – pH, CEC, iron and clay content.

The analytical results for all contaminants tested in all samples were below the SAC with the exception of nickel at one test location and benzo(a)pyrene at one location that exceeded the ecological criteria of 65 mg/kg, although the 95% UCL concentration was below the adopted SAC and hence, the exceedances were not of concern. Fragments of ACM were identified at test locations 313 ('A9' depth 0.3 - 0.4 m), 314 ('A1' depth 0.9 - 1.0 m), 315 ('A5' depth 0.5 - 0.6 m) and 320 ('A8' depth 0.8 - 0.9 m). Soil from these locations were also tested and no friable asbestos or asbestos fines were identified by the laboratory in the samples analysed.

Fill soils are preliminarily classified as general solid waste (non-putrescible, CT1) across majority of the site, with some fill in the south western corner classified as special waste asbestos general solid waste (non-putrescible, SCC1, TCLP1). Natural soils underlying the site were preliminarily classified as Virgin Excavated Natural Material.

DP considers that the site can be made suitable for the proposed development subject to the following recommendations:

- Investigations to date provide a reasonable level of confidence about the general nature and extent of asbestos material identified in fill. However, additional investigations are recommended to better characterise the degree, extent and nature of the asbestos encountered in the fill. Based on the current test results, the area shown in Drawing 2 should be adopted as the area of environmental concern for remediation purposes and additional investigations will assist in confirming this area. DP recommends undertaking such investigations after the site has been established and when access is controlled and appropriate site management measures are in place and inaccessible areas are available for testing because:
    - The school is presently occupied and there is a risk to existing site users (employees and students) associated with disturbing additional asbestos as part of the additional investigations;
    - Areas requiring investigation are beneath existing roads / demountable buildings (which are proposed to be demolished / removed) where investigations are not currently possible as test locations are inaccessible (See Drawing 2 for proposed test locations).
- Undertake a walkover to identify any suspected ACM within any building demolition footprints and nearby surface by a qualified occupational hygienist or suitably qualified environmental consultant;
- Development of appropriate contaminant management plans, remediation action plans and procedures (such as but not limited to treatment/containment/disposal) of any asbestos contaminated soils; and
- Appropriate management of any unexpected contamination finds during excavation.

Based on the available contamination testing waste classifications should be further assessed by visual and / or analytical means by a suitably qualified environmental consultant to confirm a final waste classification.

DP notes that demolition/refurbishments are to be undertaken at some existing blocks and recommends that a hazardous building materials survey should be undertaken prior to the refurbishments/demolition of any of these buildings.

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1. Introduction

Douglas Partners Pty Ltd (DP) has been engaged by Taylor Construction Pty Ltd to complete this detailed site investigation (contamination) (DSI) for the areas proposed for a state significant development (the 'site') at Carlingford West Public School ('CWPS') located at 59-73 Felton Road and part of 183 Pennant Hills Road, Carlingford. The site is shown on Drawing 1, Appendix A. It is noted that the site boundary extends beyond CWPS and includes areas of the adjoining Cumberland High School (CHS) located at 183 Pennant Hills Road, Carlingford.

The objective of the DSI is to assess the suitability of the site for the proposed development and whether further investigation and/or management is required. It is understood that the state significant development (SSD) comprises the proposed development of new school buildings, a carpark, reconfiguration of a kiss and drop zone as well as some landscaping and play areas across the school. DP notes that some other refurbishment works are being undertaken at the school and do not form part of the SSD.

This report was required as part of the SSD application in relation to the Planning Secretary's Environmental Assessment Requirements (SEARS), in which SEARS items that have been addressed herein, are shown in Table 1 below.

Table 1. Summary of response to SEARS

SEARS Item	Description	Addressed by DP
17. Soil and Water	An assessment of salinity and acid sulphate soil impacts, including a Salinity management Plan and/or Acid Sulphate Soils Management Plan, where relevant	This report (Section 5 and Section 6.2).
19. Contamination	Preliminary Site Investigation	PSI report summarised herein (Section 6).
	Detailed Site Investigation (DSI) where recommended in the PSI	This report in its entirety.
	Remediation Action Pan (RAP) where remediation is required. This must specify the proposed remediation strategy.	Report reference 86976.01.R.002
	Preliminary Long-term Environmental Management Plan where containment is proposed on-site/	Not considered required until remediation has been completed and the remediated area and containment has been validated.

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

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).

2. Proposed Development

At the time of writing this report, the following upgrades are proposed for Carlingford West Public School:

- Proposed upgrades will cater for a capacity of 1,610 students;
- Construction of 2 new buildings;
  - Building X - A three storey building that contains 24 new homebases; and
  - Building Y - A 3 storey building containing 22 homebases, 6 special program rooms and a single storey library, linking the 2 site entry points and includes a covered outdoor learning area below.
- Car par with 53 parking spaces for staff and visitors, and associated traffic strategy for the precinct;
- Reconfiguration of the current kiss-and-drop zone at Felton Road East and West;
- Landscaping masterplan for the entire school; and
- Associated signage, civil works, utilities and services to support the proposed upgrades.

Selected architectural plans showing the proposed developments have been included in Appendix A.

3. Scope of Work

The scope of work included the following:

- A review of previous reports relevant to the proposed development and available to DP;
- A review of previous reports relating to salinity relevant to the proposed development and available to DP;
- Drilling of a total of 14 boreholes (301 to 313 and 318) with the use of hand tools to depths of between 0.2 m bgl and 1.7 m bgl;
- Excavation of a total of 12 test pits (Test pits 314 to 317 and 319 to 326) with an excavator to depths of between 0.4 m bgl and 3.0 m bgl;
- Collection of soil samples from each test location at regular intervals and where signs of contamination are observed;
- Analysis of a total 43 samples soil samples that were dispatched to a NATA accredited laboratory for a combination of the following:
  - Heavy metals;
  - Total recoverable hydrocarbons (TRH), monocyclic aromatic hydrocarbons (benzene, toluene, ethyl benzene and xylenes - BTEX);

- Polycyclic aromatic hydrocarbons (PAH);
- Phenols, polychlorinated biphenyls (PCB);
- Organochlorine pesticides (OCP);
- Organophosphorous pesticides (OPP);
- Phenols;
- Triazine herbicides;
- pH, cation exchange capacity (CEC) and clay content;
- Asbestos;
- Three additional samples of fibre cement materials were also analysed for the presence of asbestos; and
- Additional QA / QC samples comprising two inter-laboratory replicates and two intra-laboratory replicates and a trip blank and trip spike.

- The preparation of this report.

4. Site Information

Site Address	53-73 Felton Road and part of 183 Pennant Hills Road, Carlingford
Legal Description	Lot 2, Deposited Plan 235625 Lot 5, Deposited Plan 235625 Northern part of Lot 3, Deposited Plan 235625
Approximate Area	3 hectares
Zoning	Zone R2 Low Density Residential
Local Council Area	City of Parramatta Council
Current Use	Primary School
Surrounding Uses	North - Low density residential and Hunts Creek East - Low and medium density residential South - Cumberland High School, Pennant Hills Road and low to high residential West - Low density residential and Kingsdene Oval

The site boundary is shown on Figure 1.

Figure 1: Site Location

5. Environmental Setting

Regional Topography	The general topography of the surrounding area comprises of winding, undulating ridgelines and valleys. With the topography generally rising towards the east whilst falling away to the north, west and south.
Site Topography	Ground surface levels within the site generally slope up from the south-western corner of the site (RL 78) towards the eastern side of the site (RL 90 at the north-eastern corner, rising to RL 95 towards Felton Road), with ground levels rising up gently and sometimes moderately.
Soil Landscape	Generally underlain by the erosional Gymea soil landscape, near the boundary with the residual Lucas Heights soil landscape at its northern boundary (based on the 1:100 000 Soil Landscape Series mapping).
Geology	On the boundary between Hawkesbury Sandstone and Ashfield Shale, with Hawkesbury Sandstone mapped at the western and Ashfield Shale at the eastern side of the site (based on the 1:100 000 Geological Series mapping). Hawkesbury Sandstone typically comprises medium to coarse

	grained sandstone, with some laminate, whereas Ashfield Shale typically comprises black to dark grey shale and laminate.
Acid Sulfate Soils	A review of the Acid Sulfate Soils risk map indicates that the site is located in an area with an extremely low probability for the occurrence of ASS.
Surface Water	Based on local topography and a review of data provided by the NSW Department of Lands indicates that surface water is likely to flow towards the nearest surface water receptor, Hunts Creek, which is situated about 650 m north of the site and flows into Lake Parramatta. DP notes that any excess surface water run-off within and from the site will predominantly be intercepted by artificial drainage lines and redirected to the local stormwater network.
Groundwater	Review of the site topography and regional geography suggests that groundwater flows north-west towards the creek. Reference to the NSW Water digital bore information indicates that there are no registered groundwater wells in close proximity to the site. Previous investigations (Section 6) and current investigations (Section 10.1) did not identify any groundwater to the depth of investigation and as such, it is considered unlikely that groundwater will be intercepted by the proposed development. Although, some perched water was encountered in fill in the south western area of the site.
Salinity	Near the boundary between very low and moderate salinity potential (based on the Salinity Potential in Western Sydney Mapping of 2002).

6. Previous Reports and Site History

The following previous reports were reviewed and relevant information is summarised below:

- Douglas Partners *Report on Updated Preliminary Site Investigation with Limited Sampling, Carlingford West Primary School, 53-73 Felton Road, Carlingford* dated 27 February 2020 (DP reference: 86976.00.R.007.Rev0)(DP 2020a);
- Douglas Partners *Report on Updated Preliminary Site Investigation with Limited Sampling, Cumberland High School, 183 Pennant Hills Road, Carlingford* dated 27 February 2020 (DP reference: 86976.00.R.008.Rev0)(DP 2020b); and
- Douglas Partners *Report on Geotechnical Investigation, Carlingford West Primary School, 53-73 Felton Road, Carlingford* dated 24 February 2020 (DP reference: 86976.00.R.005.Rev0)(DP 2020c).

6.1 Contamination

DP (2020a) and (2020b) comprised a review of a desktop preliminary site investigation (DP 2019a[1]) and (DP 2019b[2]) and a limited soil investigation comprising the drilling of 10 boreholes at each site (BH101 to BH110) and (BH201 to BH210), respectively. It is noted that only the north most quarter of CHS is within the current site, as shown in Drawing 1, Appendix A.

The desktop investigations included a review of published geological, topographic, soil, acid sulfate soil and hydrogeological information, a review of relevant publicly available databases, historical aerial photographs, Section 10.7 (2) & (5) Planning Certificates, a SafeWork NSW Records search for hazardous chemicals on the premises and a walkover.

The reports identified that both CWPS and CHS had previously been used for agricultural purposes prior to being developed into schools in the late 1960s with the surrounding areas developed into low-density residential dwellings. The most significant risks associated with contamination were considered to be imported fill, previous site uses impacting fill / surficial soils and the risk associated with the demolition / renovation of existing buildings impacting fill / surficial soil. It was noted that the mound along the northern boundary was suspected to have asbestos containing materials according to the Principal of CWPS.

As such, DP 2020a included the sampling and analysis of soil from 10 boreholes (BH101 to BH110), of which, all boreholes except BH103, BH109 and BH110 are within the current site boundary, although boreholes BH103 and BH110 are close to the site boundary. Similarly, DP 2020b included sampling and analysis from 10 boreholes (BH201 to BH210) of which, only BH201, BH202 and BH207 are within the current site boundary and BH208 is just south of the site.

Subsurface conditions encountered across the site generally consisted of topsoil/fill to depths of 0.2 m bgl to 1.7 m bgl overly residual soils to depths of 0.5 m bgl to 2.7 m bgl overlying shale. No free groundwater was encountered during the drilling of any borehole, although some water seepage was observed in BH201 and BH208 between the soil and rock interface indicative of perched water.

Analysis indicated that all reported concentrations of contaminants were below the adopted site assessment criteria with the exception of benzo(a)pyrene (B(a)P) in samples BH101 depth 0.1 - 0.2 m bgl (0.8 mg / kg) and BH208 depth 0.4 - 0.5 m bgl (1.4 mg/kg), which exceeded the adopted ecological screening level (ESL) of 0.7 mg / kg. Additional toxicity characteristic leaching procedure (TCLP) testing for PAH was conducted on sample BH208/0.4-0.5 for waste classification purposes. The TCLP results indicate that PAH, and in particular B(a)P, did not appear to be leaching from the sample and is unlikely to be impacting on groundwater.

It is noted that detectable concentrations within the SAC were recorded for various metals / metalloids, TRH and PAHs. A fragment of potential asbestos-containing material (PACM) was collected in the fill at BH104 / 0.0 - 0.2 m, although analytical testing did not identify any asbestos in the sample. Furthermore, no asbestos was observed in the boreholes drilled within the mound/oval (BH102, BH202 and BH207). However, it is noted that boreholes are not the most optimum method of assessing the

[1] Douglas Partners *Report on Preliminary Site (Contamination) Investigation, Carlingford West Public School, 53-73 Felton Road, Carlingford* dated 6 December 2019 (DP reference: 86976.00.R.001.Rev0)
[2] Douglas Partners *Report on Preliminary Site (Contamination) Investigation, Cumberland High School, 183 Pennant Hills Road, Carlingford* dated 6 December 2019 (DP reference: 86976.00.R.002.Rev0)

presence of asbestos and given the account of the Principal of CWPS, the possibility of asbestos being present across the site cannot be disregarded.

DP (2020a) concluded that the areas investigated were unlikely to be significantly impacted by broadscale contamination in soil and recommended additional investigations including delineation of B(a)P around BH101 and BH208, investigations within building footprints post demolition, additional soil investigations depending on confirmed plans / designs and additional intrusive investigation of the mound to assess the potential risk of asbestos. Hazardous building materials surveys were also recommended for buildings requiring demolition and in light of new development plans and/or refurbishment.

Fill was preliminarily classified as general solid waste (non-putrescible, CT1) across the site and general solid waste (non-putrescible, SCC1 and TCLP1) around BH208. Natural soils were classified as virgin excavated natural material (VENM).

6.2 Salinity

DP previously undertook a geotechnical investigation which included an assessment of published regional maps including the Salinity Potential in Western Sydney Mapping (2002). Consistent with Section 5, the site was mapped near the boundary between very low and moderate salinity potential. Laboratory testing for soil salinity as part of the geotechnical investigation included the analysis of two samples from the CWPS site for electrical conductivity (EC). The samples recorded EC values of 58 µS/cm and 61 µS/cm which, assuming clay soils (based on previous borehole logs) is equivalent to an EC_e value of 0.4 dS/m for both samples. Consequently, based on these EC_e results, it is anticipated that the soils across the site would be non-saline.

7. Conceptual Site Model

An initial CSM was developed based on the available historic information and observations made during the site walkover inspection. This presents and updated CSM in consideration of the results of the Updated PSIs and limited soil sampling results. The CSM identifies contaminants of potential concern (CoPC), sensitive receptors and potential transport mechanisms that could expose sensitive receptors to unacceptable health and/or ecological risks. The objective of the CSM is to highlight actual or potential exposure pathways that may exist and identify any data gaps that might need to be addressed during this investigation.

A ‘source - pathway - receptor’ approach has been used to assess the potential risks of harm being caused to human, water or environmental receptors from contamination sources on or in the vicinity of the site, via exposure pathways. The possible pathways between the sources (S1 to S3) and receptors (R1 to R5) identified in DP (2019) are provided in Table 2 below.

Table 2: Summary of Potentially Complete Exposure Pathways

Source and COPC	Transport Pathway	Receptor
S1 - Uncontrolled Filling Metals / metalloids, TRH, BTEX, PAH, OCP, OPP, PCB, phenols, and asbestos.	P1 - Ingestion and dermal contact. P2 - Inhalation of dust and / or vapours.	R1 - End users. R2 - Construction and maintenance workers.
	P2 - Inhalation of dust and / or vapours.	R3 - Adjacent site users.
	P3 - Leaching and vertical migration into groundwater.	R4 - Groundwater.
	P4 - Contact with terrestrial ecology.	R5 - Terrestrial ecology.
S2 - Previous and current site use (past agricultural use and landscaping/grounds maintenance – surface) Surface / near surface application of OCPs, OPPs, PCBs and herbicides.	P1 - Ingestion and dermal contact. P2 - Inhalation of dust and / or vapours.	R1 - End users. R2 - Construction and maintenance workers.
	P2 - Inhalation of dust and / or vapours.	R3 - Adjacent site users.
	P3 - Leaching and vertical migration into groundwater.	R4 - Groundwater.
	P4 - Contact with terrestrial ecology.	R5 - Terrestrial ecology.
S3 - Existing buildings on site Asbestos, lead based paints, PCB containing capacitors and synthetic mineral fibre (SMF).	P1 - Ingestion and dermal contact. P2 - Inhalation of dust and / or vapours.	R1 - End users. R2 - Construction and maintenance workers.
	P2 - Inhalation of dust and / or vapours.	R3 - Adjacent site users.

8. Sampling and Analysis Quality Plan

8.1 Data Quality Objectives

The DSI 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 C.

8.2 Soil Sampling and Analytical Rationale

Based on the CSM and DQO the following sampling rationale was adopted.

A combination of a systematic sampling strategy and a judgemental sampling strategy were adopted to determine borehole/test pit locations. Locations were based on site history information and the CSM with the rationale provided below. Borehole / test pit locations are shown on Drawing 1, in Appendix A.

Boreholes BH301 to BH313 and BH318	An approximate 27 m grid across the accessible part of the site to provide general coverage based on the detection of circular hot spots using a systemic grid sampling pattern as recommended in Table A of NSW EPA (1995). The sampling design guidelines for a site of approximately 3 ha for site characterisation recommends a minimum of 40 sampling points. DP notes that a total of 10 test locations within the site have previously been drilled as part of DP (2020a) and DP (2020b) with some additional boreholes close to the site boundary. As access to some areas was still limited by existing building and considering previous test locations, a reduced number of locations were chosen.
Test pits TP314 to TP317 and TP319 to TP326	An increased density of test locations were placed across the southern oval where asbestos was suspected to be present in the fill. Test pits were excavated to improve the ability to visually observe the presence of PACM.

Soil samples were collected from each borehole / test pit at depths of approximately 0-0.1 m, 0.4-0.5 m, 0.9-1.0 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 D.

A total of 43 soil samples were selected for analysis with 37 samples analysed from fill and 6 from natural, given that field observations and site history suggested that contain likely to be associated with fill than natural soils. At least one sample from each test location was selected for analysis, with more samples selected was deepest.

Samples were analysed for the primary COPC including heavy metals, TRH, BTEX, PAH, and asbestos, with a smaller number also analysed for OCP, OPP, PCB phenols, herbicides, pH, CEC, iron and clay content.

9. Site Assessment Criteria

The site assessment criteria (SAC) applied in the current investigation are informed by the CSM (Section 7) 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 Residential A (including primary schools) land use scenario. The derivation of the SAC is included in Appendix E and the adopted SAC are listed on the summary analytical results tables in Appendix F. It is noted that the SAC have been updated since DP (2020a) and DP (2020b) to include site specific data from the current investigation.

10. Results

10.1 Field Work Results

The borehole and test pit logs for this assessment are included in Appendix G. The logs recorded the following general sub-surface profile across the site with the exception of the south western corner of the site (that is, from the western half of the mounded oval towards the western site boundary):

- Fill / Topsoil: Dark brown silty clay / silty sand / silty sandy clay in all test pits to depths of between 0.1 m and 0.6 m below ground level (bgl); underlain by
- Fill: Brown / yellow-brown / dark brown silty clay / silty sand / sandy clay with gravel underlying the above to depths of 0.2 m bgl and 1.5 m bgl respectively; underlain by
- Silty clay/Sandy clay: red-brown, orange-brown mottled yellow-brown underlying the above to depths of between 0.8 m bgl to 1.7 m bgl (depth of investigation); underlain by
- Siltstone/shale: Dark grey siltstone/shale.

The subsurface conditions encountered within the south western corner of the site (borehole 313, test pits 314, 315, 319, 320, 323 and 324) was more variable and generally consisted deeper fill with the following profile:

- Fill / Topsoil: Dark brown silty sandy clay / gravelly clay / silty sand to depths of between 0.1 m to 0.4 m; underlain by
- Fill / Gravelly clay / sandy clay / silty clay: Brown and grey to depths of between 0.2 m to 1.6; underlain by
- Fill / Gravelly clay / silty clay: dark brown mottled orange-brown, with igneous, sandstone and siltstone gravel, with anthropogenic inclusions such as glass fragments, brick, ceramic fragments, metal pipe, porcelain fragments, fragments of fibre cement material, concrete, plastic fragments, terracotta pipe and timber pieces to depths of between 0.6 m bgl to 2.9 m bgl; underlain by
- Fill / Silty clay / sandy clay: dark brown or orange-brown with roots to depths of between 1.0 m bgl to 2.9 m bgl; underlain by
- Silty clay / gravelly clay / siltstone: grey mottled red-brown / orange-brown with ironstone gravel to depths of between 1.4 m bgl to 3.0 m bgl (depth of investigation).

It is noted that test pit 323 collapsed due to sidewall instability at a depth of 2.6 m bgl in fill and the depth of natural soils was not determined at this test location.

Fragments of fibre cement material (asbestos containing materials (ACM)) were identified in fill at depth in fill layers with anthropogenic materials (BH313, TP314, TP315 and TP320) and laboratory testing confirmed the presence of asbestos in the fragments. There was no other 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.

No free groundwater was observed during excavation of test pits or drilling of boreholes. Water seepage was observed in TP323 at 2 m bgl and is anticipated to be associated with perched water in fill which is consistent with perched water previously identified in DP (2020a) and DP (2020b) between the soil and rock interface. It should be noted that groundwater levels are affected by climatic conditions and soil permeability and will therefore vary with time.

10.2 Laboratory Analytical Results

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

- Table F1A: Summary of Laboratory Results - Site Assessment Criteria (Metals, TRH, BTEX and PAH);
- Table F1B: Summary of Laboratory Results - Site Assessment Criteria (Phenols, OCP, OPP, PCB and Asbestos); and
- Table F2: Summary of Results - Waste Classification Criteria.

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

11. Discussion

11.1 Soils

The analytical results for all contaminants tested in all samples were below the SAC with the exception of:

- Nickel at test location 302 depth 0.4 - 0.5 m with a concentration of 110 mg/kg exceeded the ecological criteria of 65 mg/kg; and
- Fragments of ACM were identified at test locations 313 ('A9' depth 0.3 - 0.4 m), 314 ('A1' depth 0.9 - 1.0 m), 315 ('A5' depth 0.5 - 0.6 m) and 320 ('A8' depth 0.8 - 0.9 m). Soil from these locations were also tested and no friable asbestos or asbestos fines were identified by the laboratory in the samples analysed.

In the current investigation, only one sample had a concentration of nickel exceeding the adopted SAC. The 95% upper confidence limit (UCL) of nickel of samples in the top 2 m of soil across the site indicates a 95% UCL concentration of nickel at 15.62 mg/kg which is within the ecological criteria of 65 mg/kg. Therefore, the exceedance is not considered to be of concern. A copy of the statistical output is included in Appendix F.

DP notes that DP (2020a) recorded a concentration of 1.4 mg/kg of B(a)P in sample BH208 (depth 0.4 - 0.5 m) that exceeded the ESL of 0.7 mg/kg. The 95% UCL of B(a)P of samples in the top 2 m of soil across the site indicates a 95% UCL concentration of 0.213 mg/kg which is within the adopted SAC. A copy of the statistical output is included in Appendix F.

Furthermore, it is noted that the B(a)P ESL is a low reliability value. Higher reliability screening levels have been published in CRC CARE *Risk-based Management and Remediation Guidance for Benzo(a)pyrene* (CRC CARE, 2017). The high reliability value of 33 mg/kg (or ranging from 21 mg/kg to 135 mg/kg) for fresh B(a)P suggests that the concentrations of B(a)P detected at the site are unlikely to pose an unacceptable risk to terrestrial ecology and therefore the exceedance is not considered to be of concern.

Fill materials with high proportions of anthropogenic materials including test locations 313, 314, 315, 319, 320, 323 and 324, is similar to the fill in which the fragments of ACM were identified. Accordingly, and noting that this layer of fill was encountered from depths of between 0.2 m to 1.6 m and extended to depths of between 0.6 m bgl to 2.9 m, as described in Section 10.1, it is considered highly likely that fragments of ACM would also be encountered elsewhere in this layer. The area shown shaded pink in Drawing 2, Appendix A indicates the currently known extent of possible asbestos contamination, which includes all test locations asbestos /likely asbestos impacted fill was identified, either up to the site boundary or to the next closest test location which did not contain fill with characteristics consistent with potential asbestos contamination (i.e. high proportions of anthropogenic/building materials).

Based on the soils results, it is considered unlikely that any contamination in the soil would impact on surface water run off or the underlying groundwater, noting that groundwater was not encountered in the investigation and is likely to be beyond the depth of excavation of the proposed development.

11.2 Preliminary Waste Classification

11.2.1 Fill

NSW EPA (2014) contains a six step procedure for determining the type of waste and the waste classification. Part of the procedure, for materials not classified as special waste or pre-classified waste, is a comparison of analytical data initially against contaminant threshold (CT) values specific to a waste category. Alternatively, the data can be assessed against specific contaminant concentration (SCC) thresholds when used in conjunction with toxicity characteristic leaching procedure (TCLP) thresholds.

The CT, SCC, and TCLP values relevant to this waste classification are shown in the Table F2 (Appendix F).

The following Table 3 presents the results of the six step procedure outlined in EPA (2014) for determining the type of waste and the waste classification. This process applies to the fill at the site.

Table 3: Six Step Classification

Step	Comments	Rationale
1. Is it special waste?	Yes – Borehole 313 and Test pits 314, 315, 319, 320, 323 and 324)	Asbestos containing material (ACM) was identified in fragments of fibre cement material in fill containing anthropogenic materials at 313, 314, 315 and 320 and confirmed by laboratory testing. The other test locations (319, 323 and 324) identified anthropogenic materials consistent with potential ACM, from depths of between 0.2 m to 1.6 to depths of between 0.6 m bgl to 2.9 m.
	No	No asbestos-containing materials (ACM), or coal tar, clinical or related waste, or waste tyres were observed in the other test pits or boreholes; Asbestos was not detected by the analytical laboratory.
2. Is it liquid waste?	No	Materials composed of a soil matrix.

Step	Comments	Rationale
3. Is the waste "pre-classified"?	No	Filling and natural material did not fall into one of the pre-classified categories
4. Does the Waste have hazardous waste characteristics	No	Waste not observed to/ or considered at risk to contain explosives, gases, flammable solids, oxidising agents, organic peroxides, toxic substances or corrosive substances, substances liable to spontaneous combustion.
5. Chemical Assessment	Conducted	Refer to Table F2 in Appendix F.
6. Is the Waste Putrescible?	No	All observed components of filling composed of materials pre-classified as non-putrescible (i.e. soil).

As shown in Table F2 (Appendix F) all contaminant concentrations for the analysed fill samples were within the contaminant thresholds (CT1s) for general solid waste (GSW) with the exception of nickel in one sample from test location 320/0.4-0.5 m. Additional toxicity characteristic leaching procedure (TCLP) extract and analysis for nickel was conducted and were within the contaminant thresholds SCC1 and TCLP1 for GSW.

It is noted that in the previous investigation (DP 2020b), B(a)P exceeded the CT1 thresholds in test location BH208/0.4-0.5 m. Similarly, additional TCLP testing showed that concentrations were within SCC1 and TCLP1 thresholds for GSW.

Therefore, the following preliminary *in situ* waste classifications have been provided:

- The fill across the majority of the site is preliminary classified *in situ* as GSW (non-putrescible, CT1);
- Fill in the southern section of the site around test pit 320 and borehole BH208 is preliminarily classified as GSW (SCC1, TCLP); and
- Fill material in borehole 313 and test pits 314, 315, 319, 320, 323 and 324 with high concentrations of anthropogenic materials at depths indicated in section 10.1 and Table 3 above, are preliminarily classified as Special Waste Asbestos - GSW (SCC1, TCLP1) in conjunction with the chemical classification above.

It is noted that further *in situ* or *ex situ* investigation including visual and analytical processes are required to confirm this waste classification, prior to offsite disposal.

11.2.2 Natural

The POEO Act defines (VENM) as:

'*natural material (such as clay, gravel, sand, soil or rock fines):*

(a) that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities and

(b) that does not contain any sulfidic ores or soils or any other waste.

The following publications with background concentration ranges for Australian soils have been referenced in assessing the concentrations of analytes:

- *National Environmental Protection (Assessment of Site Contamination) Measure* (1999) Schedule B (1) Guidelines on the Investigation Levels for Soil and Groundwater, (NEPC 1999) [typical background ranges as sourced form Berkman (1989)];
- *Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites* (1992), Environmental Soil Quality Guidelines Column A Background (ANZECC A) (ANZECC 1992); and
- *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (2000), Volume 3, Table 9.2.16 Datasets used to derive suggested upper background values for uncontaminated Australian soils (ANZECC 2000).

The following Table 4 presents the results of the assessment of natural soils and rock underlying fill at the site with reference to the VENM definition and EPA advice outlined above.

Table 4: VENM Classification Procedure

Item	Comments	Rationale
1. Is the material natural?	Yes	Soils are of natural origin (with reference to the borehole and test pit logs)
2. Are there current or previous land uses that have (or may have) contaminated the materials?	Yes	Potential contamination from previous land use (Refer to Section 6).
3. Are manufactured chemicals or process residues present?	Testing undertaken	Testing was undertaken to assess for the presence of chemicals.
4. Are sulfidic ores or soils present?	No	Site located in an area of no known occurrence of acid sulfate soils (see Section 5).
5. Are naturally occurring asbestos soils present?	No	Based on the geology, naturally occurring asbestos is not considered to be an issue of concern for the subject materials.
6. Is there any other waste present?	No	Apart from filling in the soil strata above containing some anthropogenic materials, there were no other wastes observed to be present.

As shown in Table F2, Appendix F, all analytical results for the analysed natural samples were within the background ranges. Based on the available contamination testing results, natural materials are preliminarily classified as VENM, although further assessment by visual and analytical means is required for a final waste classification.

11.3 Data Quality Assurance and Quality Control

The data quality assurance and quality control (QA / QC) results are included in Appendix C. 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.

12. Conclusions and Recommendations

The DSI comprised a review of site history, a site walkover and an intrusive soil investigation to assess the suitability of the site for the proposed development and whether further investigation and / or management is required.

All contaminant concentrations were within the adopted SAC, with the exception of asbestos identified in fill in the south western corner of the site at test locations 313, 314, 315 and 320, moreover it is considered highly likely that asbestos is present in anthropogenic laden fill in test locations 319, 323 and 324 and possibly elsewhere. The fill was encountered from depths of between 0.2 m to 1.6 m bgl to depths of between 0.6 m to 2.9 m bgl.

As such, DP recommend the following:

- Investigations to date provide a reasonable level of confidence about the general nature and extent of asbestos material identified in fill. However, additional investigations are recommended to better characterise the degree, extent and nature of the asbestos encountered in the fill. Based on the current test results, the area shown in Drawing 2 should be adopted as the area of environmental concern for remediation purposes and additional investigations will assist in confirming this area. DP recommends undertaking such investigations after the site has been established and when access is controlled and appropriate site management measures are in place and inaccessible areas are available for testing because:
    - The school is presently occupied and there is a risk to existing site users (employees and students) associated with disturbing additional asbestos as part of the additional investigations;
    - Areas requiring investigation are beneath existing roads / demountable buildings (which are proposed to be demolished / removed) where investigations are not currently possible as test locations are inaccessible (See Drawing 2 for proposed test locations).
- Undertake a walkover to identify any suspected ACM within any building demolition footprints and nearby surface by a qualified occupational hygienist or suitably qualified environmental consultant;
- Development of appropriate contaminant management plans, remediation action plans and procedures (such as but not limited to treatment/containment / disposal) of any asbestos contaminated soils; and
- Appropriate management of any unexpected contamination finds during excavation.

Based on the results of the investigation, it is considered that the site can be made suitable for the proposed residential (primary school) development subject to implementation of the recommendations above.

It is recommended that a Remediation Action Plan (RAP) be prepared detailing the works required to render the site suitable for the proposed development including a protocol for any additional finds of asbestos. The RAP should also include an Unexpected Finds Protocol outlining the procedures that would be undertaken in the event unexpected contamination is encountered during excavation works.

DP notes that the presence of asbestos in fill may present constraints on the proposed development e.g., aesthetics, acceptability and practicality for the developer / user, asbestos licenced contractor requirements during development and disposal. These should be discussed with the appropriate stakeholders and consultants.

Preliminary *in situ* waste classifications have also been provided as follows:

- The fill across the majority of the site is preliminary classified as GSW (non-putrescible, CT1);
- Fill in the southern section of the site around test pit 320 and borehole BH208 is preliminarily classified as GS W (SCC1, TCLP);
- Fill material in borehole 313 and test pits 314, 315, 319, 320, 323 and 324 with high concentrations of anthropogenic materials at depths indicated in section 10.1 and Table 3 above, are preliminarily classified as Special Waste Asbestos - GSW (SCC1, TCLP1) in conjunction with the chemical classification above; and
- Natural soils are preliminarily classified as VENM.

Based on the available contamination testing waste classifications should be further assessed by visual and / or analytical means by a suitably qualified environmental consultant to confirm a final waste classification.

DP notes that demolition/refurbishments are to be undertaken at some existing blocks and recommends that a hazardous building materials survey should be undertaken prior to the refurbishments/demolition of any of these buildings.

13. 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. (2020). *Guidelines for Consultants Reporting on Contaminated Land.* Contaminated Land Guidelines: NSW Environment Protection Authority.

14. Limitations

Douglas Partners (DP) has prepared this report (or services) for this project at Carlingford West Public School, Felton Road, Carlingford in accordance with DP's proposal 86976.01.P.001.Rev0 dated 20 April 2021 and acceptance received from Taylor Construction Pty Ltd dated 22 April 2021. The work was the Taylor consultancy agreement with DP for Carlingford West Public School. This report is provided for the exclusive use of Taylor Construction Pty Ltd 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.

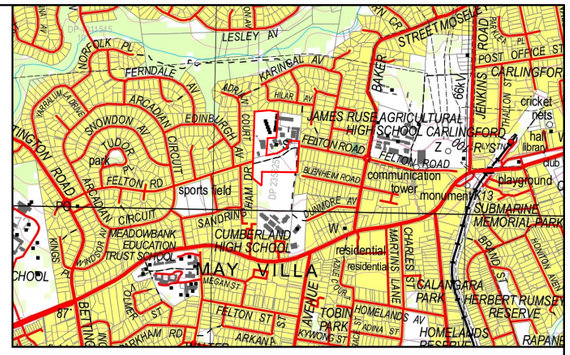
This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

Asbestos has been detected by observation or by laboratory analysis, in filling materials at the selected test locations sampled and analysed. However, building demolition materials, such as concrete, brick, tile, ceramics, porcelain, terracotta pipe fragments, were, also located in below-ground test locations where asbestos had not been observed 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 parts of the site being inaccessible and not available for inspection/sampling and reasonable access. It is therefore considered possible that

Appendix A

Drawings



LOCALITY MAP

Notes:
1. Basemap from metromap.com (dated 15/04/2021)
2. Test locations shown are approximate only
3. Test locations '100' series from DP (2020a) and '200'series from DP (2020b)

Legend
- Site Boundary
- Existing CHS Boundary
- Existing CWPS Boundary
- Current Investigation - Borehole Location
- Current Investigation - Test Pit Location
- Previous Environmental Borehole Location
- Previous Geotechnical Borehole Location

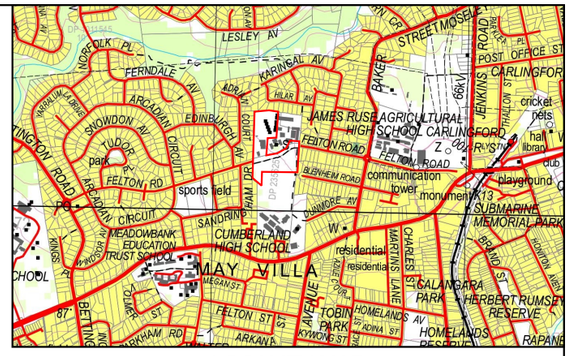
0 20 40 60 80 100 m

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT:	Taylors Construction Pty Ltd	TITLE:	**Site and Test Location Plan**
OFFICE:	Sydney	DRAWN BY:	LT		**Carlingford West Public School**
SCALE:	1:1200 @ A3	DATE:	19.05.2021		**Felton Road, Carlingford**

N

PROJECT No:	86976.01
DRAWING No:	D.01
REVISION:	0



LOCALITY MAP

Notes:
1. Basemap from metromap.com (dated 15/04/2021)
2. Test locations shown are approximate only
3. Test locations '100' series from DP (2020a) and '200'series from DP (2020b)

Legend

- Site Boundary
- Existing CHS Boundary
- Existing CWPS Boundary
- Area of Environmental Concern Requiring Remediation
- Current Investigation - Borehole Location
- Current Investigation - Test Pit Location
- Previous Environmental Borehole Location
- Previous Geotechnical Borehole Location
- Proposed Additional Investigation Areas
- BH/TP Asbestos Contaminated Fill

0 20 40 60 80 100 m

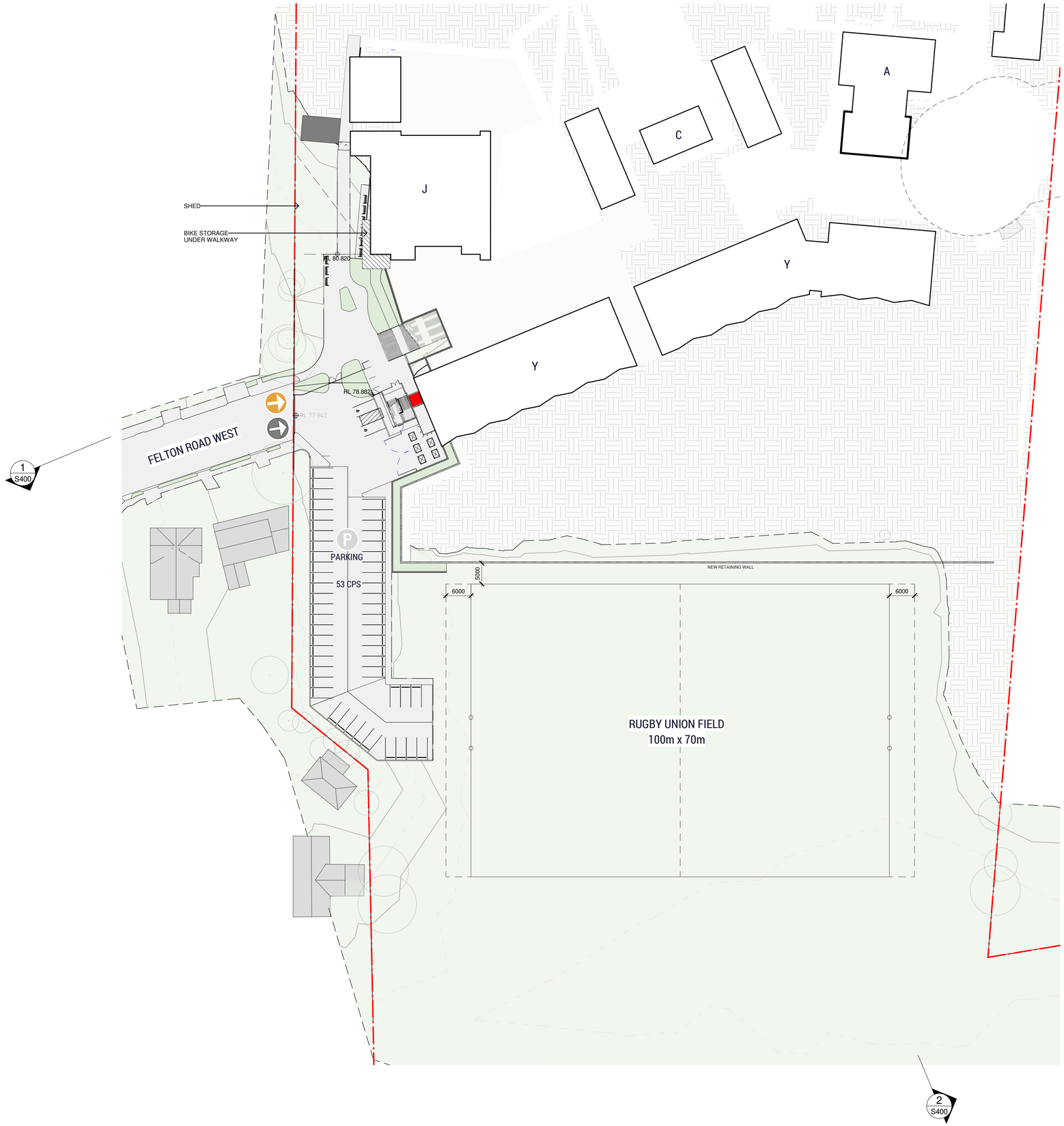
Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT:	Taylors Construction Pty Ltd		
OFFICE:	Sydney	DRAWN BY:	LT
SCALE:	1:1200 @ A3	DATE:	22.06.2021

TITLE: **Site and Test Location Plan**
Carlingford West Public School
Felton Road, Carlingford

N

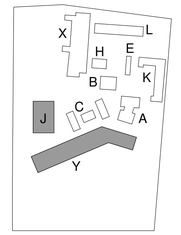
PROJECT No:	86976.01
DRAWING No:	D.02
REVISION:	0



NBRSARCHITECTURE.

TAYLOR

KEY PLAN



- REFURBISHMENT WORKS
- NEW BUILDING WORKS
- OUTDOOR PLAY SPACE
  TOTAL PLAY AREA: 20,100 m²
- LIFT
- P PLANT SPACE
- PEDESTRIAN ACCESS
- VEHICLE ACCESS
- (P) PARKING
- TPZ (TREE PROTECTION ZONE)
- SRZ (STRUCTURAL ROOT ZONE)

Issue

No.	Date	Description	Chkd
1	16.04.2021	Issue for Concept 100%	EK
2	28.04.2021	Issue for Draft Schematic	EK
3	30.04.2021	Issue for Draft Schematic	EK
4	10.05.2021	Issue for Draft Schematic	EK

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Carlingford West Public School

at
Felton Rd, Carlingford NSW 2118

for
SINSW

Drawing Title
SITE ACCESS - CARPARK LEVEL

PRELIMINARY

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Drawing Reference
21058-NBRS-00-DR-A-S100

Revision
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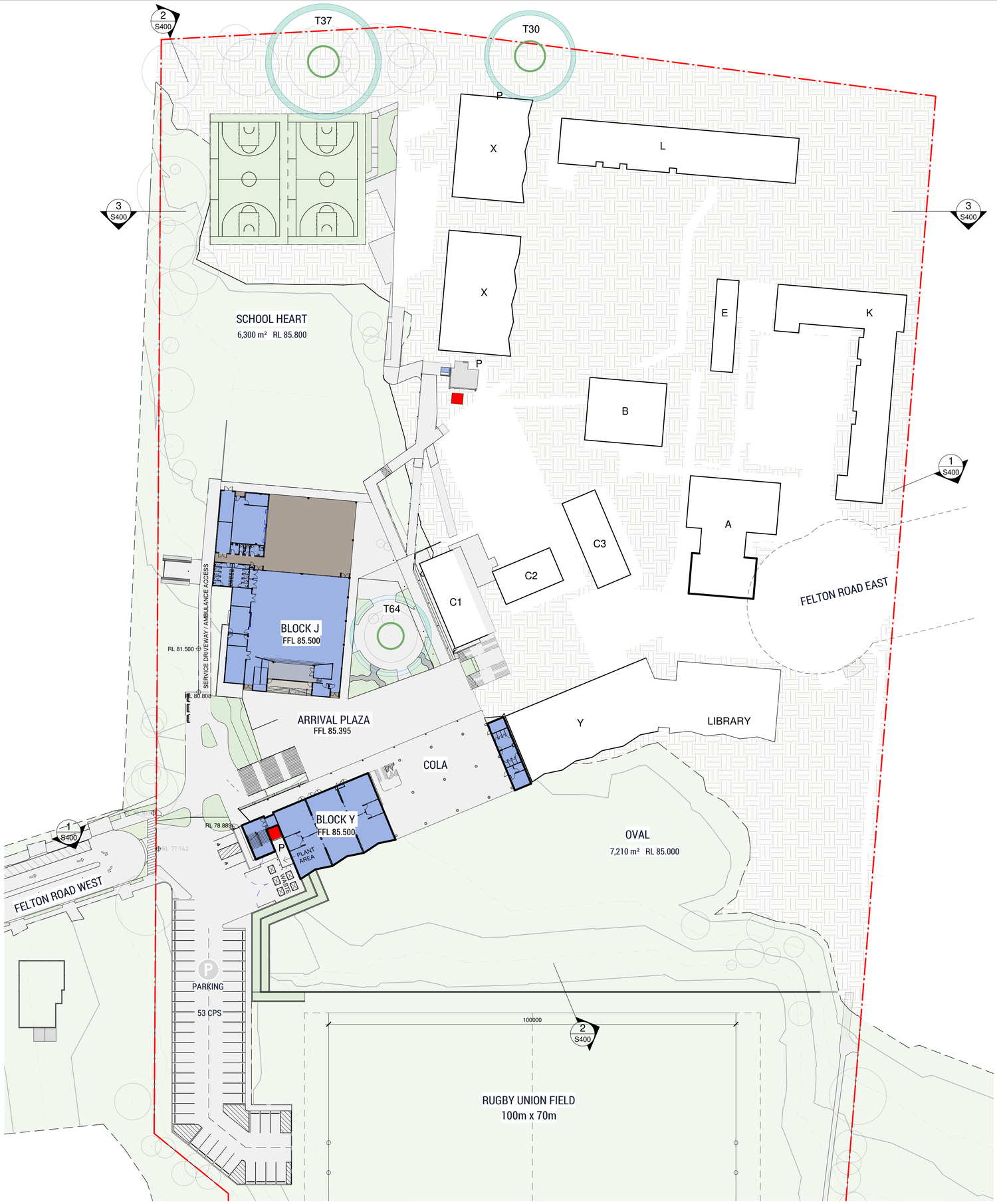
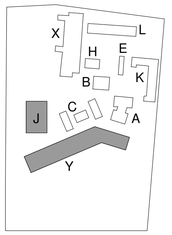


NBRSARCHITECTURE.

TAYLOR

KEY PLAN



- REFURBISHMENT WORKS
- NEW BUILDING WORKS
- OUTDOOR PLAY SPACE
  TOTAL PLAY AREA: 20,100 m²
- LIFT
- P PLANT SPACE
- PEDESTRIAN ACCESS
- VEHICLE ACCESS
- PARKING
- TPZ (TREE PROTECTION ZONE)
- SRZ (STRUCTURAL ROOT ZONE)

Issue

No.	Date	Description	Chkd
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2	13.04.2021	Issue for Concept 75%	EK
3	16.04.2021	Issue for Concept 100%	EK
4	28.04.2021	Issue for Draft Schematic	EK
5	30.04.2021	Issue for Draft Schematic	EK
6	10.05.2021	Issue for Draft Schematic	EK

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Drawing Title
SITE PLAN - LOWER GROUND LEVEL

PRELIMINARY

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Revision
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NBRSARCHITECTURE.

TAYLOR

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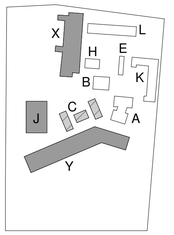

- REFURBISHMENT WORKS
- NEW BUILDING WORKS
- OUTDOOR PLAY SPACE
  TOTAL PLAY AREA: 20,100 m²
- LIFT
- P PLANT SPACE
- PEDESTRIAN ACCESS
- VEHICLE ACCESS
- PARKING
- TPZ (TREE PROTECTION ZONE)
- SRZ (STRUCTURAL ROOT ZONE)

Issue

No.	Date	Description	Chkd
1	24.03.2021	PRELIMINARY	
2	13.04.2021	Issue for Concept 75%	EK
3	16.04.2021	Issue for Concept 100%	EK
4	28.04.2021	Issue for Draft Schematic	EK
5	30.04.2021	Issue for Draft Schematic	EK
6	10.05.2021	Issue for Draft Schematic	EK

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Drawing Title
SITE PLAN - GROUND LEVEL

PRELIMINARY

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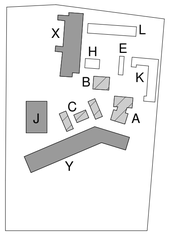

- REFURBISHMENT WORKS
- NEW BUILDING WORKS
- OUTDOOR PLAY SPACE
  TOTAL PLAY AREA: 20,100 m²
- LIFT
- P PLANT SPACE
- PEDESTRIAN ACCESS
- VEHICLE ACCESS
- PARKING
- TPZ (TREE PROTECTION ZONE)
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Issue

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1	24.03.2021	PRELIMINARY	
2	13.04.2021	Issue for Concept 75%	EK
3	16.04.2021	Issue for Concept 100%	EK
4	28.04.2021	Issue for Draft Schematic	EK
5	30.04.2021	Issue for Draft Schematic	EK
6	10.05.2021	Issue for Draft Schematic	EK

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Carlingford West Public School

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for
SINSW

Drawing Title
SITE PLAN - UPPER GROUND LEVEL

PRELIMINARY

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Drawing Reference
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Revision
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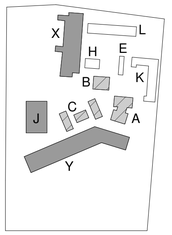

- REFURBISHMENT WORKS
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No.	Date	Description	Chkd
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6	10.05.2021	Issue for Draft Schematic	EK

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Drawing Title
SITE PLAN - LEVEL 1

PRELIMINARY

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Drawing Reference
21058-NBRS-00-DR-A-S104

Revision
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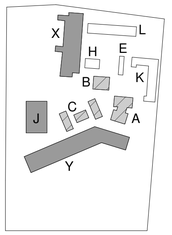
KEY PLAN



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No.	Date	Description	Chkd
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3	30.04.2021	Issue for Draft Schematic	EK
4	10.05.2021	Issue for Draft Schematic	EK

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for
SINSW

Drawing Title
SITE ROOF PLAN

PRELIMINARY

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Drawing Reference
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Revision
4

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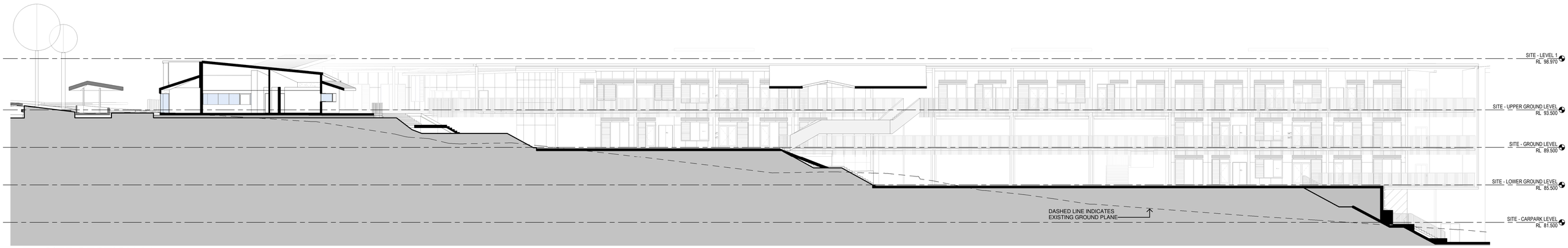
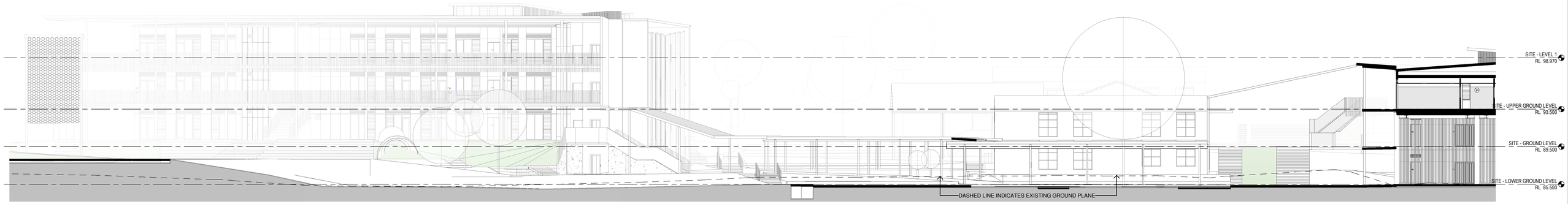


1 SITE SECTION 01
1 : 200



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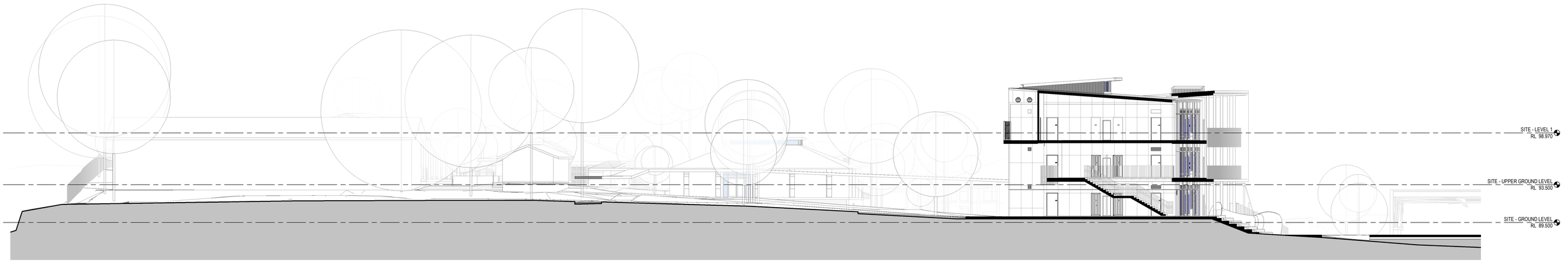
1 : 200



3 SITE SECTION 03
1 : 200

Issue

No.	Date	Description	Chkd
1	16.04.2021	Issue for Concept 100%	EK
2	30.04.2021	Issue for Draft Schematic	EK
3	10.05.2021	Issue for Draft Schematic	EK

Drawing Title
SITE SECTIONS

PRELIMINARY

Project
Carlingford West Public School

at
Felton Rd, Carlingford NSW 2118

for
SINSW

Architect
NBRSARCHITECTURE.
Sydney
61 2 9922 2344 nbrsarchitecture.com

Nominated Architects:
Andrew Duffin NSW 5602
NBRS & Partners Pty Ltd VIC 51197

ABN 16 002 247 565

Date 10/05/2021 6:22:16 PM
Scale 1 : 200 @ A1

Drawing Reference
21058-NBRS-00-DR-A-S400

Revision
3

0 10 20 30 40 50 60 70 80 90 100

Appendix B

Notes About this Report

About this Report

Douglas Partners

Introduction

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

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

Copyright

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

Data Quality Objectives and Indicators
Quality Assurance and Quality Control

Appendix C – Data Quality Objectives and Indicators, Quality Assurance and Quality Control

C1.0 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 in 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	4.7% of primary samples; <30% RPD	C
Inter-laboratory replicates	4.7% of primary samples; <30% RPD	C
Trip Spikes	1 per sampling event; 60-140% recovery	C
Trip Blanks	1 per sampling event; <PQL	C
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

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 typically low actual differences in the concentrations of the replicate pairs where some RPD exceedances occurred;

- 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 DQI.

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

C2.0 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.

Data Quality Indicator	Method(s) of Achievement
	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.
	Generally 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.

C3.0 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.

C4.0 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 Replicates

			Metals								TRH					
			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)
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
BD3/20210501	0 m	01-May-21 15:00	<5	<1	10	11	16	<0.1	5	23	<10	<50	<10	<50	<100	<100
303	0.1 - 0.2 m	01/05/2021	5	<0.4	18	13	32	<0.1	6	27	<25	<50	<25	<50	160	<100
		Difference	0	0.6	8	2	16	0	1	4	15	0	15	0	60	0
		RPD	0%	**86%**	**57%**	17%	**67%**	0%	18%	16%	**86%**	0%	**86%**	0%	**46%**	0%
BD9/20210501	0 m	01-May-21 15:00	<5	<1	5	13	28	<0.1	<2	<5	<10	<50	<10	<50	<100	<100
309	1 - 1.1 m	01/05/2021	5	<0.4	8	19	34	<0.1	2	10	<25	<50	<25	<50	<100	<100
		Difference	0	0.6	3	6	6	0	0	5	15	0	15	0	0	0
		RPD	0%	**86%**	**46%**	**38%**	19%	0%	0%	**67%**	**86%**	0%	**86%**	0%	0%	0%
BD7/20210501	0 m	01/05/2021	8	<0.4	21	12	20	<0.1	3	14	<25	<50	<25	<50	<100	<100
319	0.4 - 0.5 m	01/05/2021	9	<0.4	26	15	23	<0.1	5	32	<25	<50	<25	<50	<100	<100
		Difference	1	0	5	3	3	0	2	18	0	0	0	0	0	0
		RPD	12%	0%	21%	22%	14%	0%	**50%**	**78%**	0%	0%	0%	0%	0%	0%
BD8/20210501	0 m	01/05/2021	7	<0.4	18	24	83	<0.1	5	160	<25	<50	<25	<50	150	<100
319	2.4 - 2.5 m	01/05/2021	11	<0.4	14	14	35	<0.1	4	38	<25	<50	<25	<50	<100	<100
		Difference	4	0	4	10	48	0	1	122	0	0	0	0	50	0
		RPD	**44%**	0%	25%	**53%**	**81%**	0%	22%	**123%**	0%	0%	0%	0%	**40%**	0%

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

			BTEX				PAH				Phenol					
			Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene [b]	Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ	Total PAHs	Phenol	DDD	DDT+DDE+DDD [c]	DDE	DDT	Aldrin & Dieldrin
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
BD3/20210501	0 m	01-May-21 15:00	<0.2	<0.5	<0.5	<0.5	<1	<0.5	<0.5	NT	NT	NT	NT	NT	NT	NT
303	0.1 - 0.2 m	01/05/2021	<0.2	<0.5	<1	<1	<1	0.2	<0.5	1.6	NT	NT	NT	NT	NT	NT
		Difference	0	0	0.5	0.5	0	0.3	0	-	-	-	-	-	-	-
		RPD	0%	0%	**67%**	**67%**	0%	**86%**	0%	-	-	-	-	-	-	-
BD9/20210501	0 m	01-May-21 15:00	<0.2	<0.5	<0.5	<0.5	<1	<0.5	<0.5	NT	NT	NT	NT	NT	NT	NT
309	1 - 1.1 m	01/05/2021	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	NT	NT	NT	NT	NT	NT
		Difference	0	0	0.5	0.5	0	0.45	0	-	-	-	-	-	-	-
		RPD	0%	0%	**67%**	**67%**	0%	**164%**	0%	-	-	-	-	-	-	-
BD7/20210501	0 m	01/05/2021	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	NT	NT	NT	NT	NT	NT
319	0.4 - 0.5 m	01/05/2021	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	NT	NT	NT	NT	NT	NT
		Difference	0	0	0	0	0	0	0	0	-	-	-	-	-	-
		RPD	0%	0%	0%	0%	0%	0%	0%	0%	-	-	-	-	-	-
BD8/20210501	0 m	01/05/2021	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	<5	<0.1	<0.1	<0.1	<0.1	<0.1
319	2.4 - 2.5 m	01/05/2021	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	<5	<0.1	<0.1	<0.1	<0.1	<0.1
		Difference	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		RPD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

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

			OCP						OPP	PCB	Asbestos					
			Total Chlordane	Endrin	Total Endosulfan	Heptachlor	Hexachlorobenzene	Methoxychlor	Chlorpyriphos	Total PCB	Asbestos ID in soil (40g sample) >0.1g/kg	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(k)fluoranthene
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
BD3/20210501	0 m	01-May-21 15:00	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.5	<0.5	<0.5	<0.5	<0.5
303	0.1 - 0.2 m	01/05/2021	NT	NT	NT	NT	NT	NT	NT	NT	NAD	<0.1	<0.1	<0.1	0.2	NT
		Difference	-	-	-	-	-	-	-	-	-	0.4	0.4	0.4	0.3	-
		RPD	-	-	-	-	-	-	-	-	-	**133%**	**133%**	**133%**	**86%**	-
BD9/20210501	0 m	01-May-21 15:00	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.5	<0.5	<0.5	<0.5	<0.5
309	1 - 1.1 m	01/05/2021	NT	NT	NT	NT	NT	NT	NT	NT	NAD	<0.1	<0.1	<0.1	<0.1	NT
		Difference	-	-	-	-	-	-	-	-	-	0.4	0.4	0.4	0.4	-
		RPD	-	-	-	-	-	-	-	-	-	**133%**	**133%**	**133%**	**133%**	-
BD7/20210501	0 m	01/05/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.1	<0.1	<0.1	<0.1	NT
319	0.4 - 0.5 m	01/05/2021	NT	NT	NT	NT	NT	NT	NT	NT	NAD	<0.1	<0.1	<0.1	<0.1	NT
		Difference	-	-	-	-	-	-	-	-	-	0	0	0	0	-
		RPD	-	-	-	-	-	-	-	-	-	0%	0%	0%	0%	-
BD8/20210501	0 m	01/05/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NT	<0.1	<0.1	<0.1	<0.1	NT
319	2.4 - 2.5 m	01/05/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	<0.1	<0.1	<0.1	<0.1	NT
		Difference	0	0	0	0	0	0	0	0	-	0	0	0	0	-
		RPD	0%	0%	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	-

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

			Complete PAH suite								TRH					
			Benzo(g,h,i)perylene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	TRH C6 - C9	TRH C10 - C14	TRH C15 - C28	TRH C29 - C36	C10-C36 recoverable hydrocarbons	alpha-BHC
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
BD3/20210501	0 m	01-May-21 15:00	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50	NT
303	0.1 - 0.2 m	01/05/2021	0.1	0.2	<0.1	0.3	<0.1	<0.1	0.1	0.3	<25	<50	<100	120	NT	NT
		Difference	0.4	0.3	0.4	0.2	0.4	0.4	0.4	0.2	15	0	0	20	-	-
		RPD	**133%**	**86%**	**133%**	**50%**	**133%**	**133%**	**133%**	**50%**	**86%**	0%	0%	18%	-	-
BD9/20210501	0 m	01-May-21 15:00	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50	NT
309	1 - 1.1 m	01/05/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	NT	NT
		Difference	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	15	0	0	0	-	-
		RPD	**133%**	**133%**	**133%**	**133%**	**133%**	**133%**	**133%**	**133%**	**86%**	0%	0%	0%	-	-
BD7/20210501	0 m	01/05/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	NT	NT
319	0.4 - 0.5 m	01/05/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	NT	NT
		Difference	0	0	0	0	0	0	0	0	0	0	0	0	-	-
		RPD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-
BD8/20210501	0 m	01/05/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	120	NT	<0.1
319	2.4 - 2.5 m	01/05/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	NT	<0.1
		Difference	0	0	0	0	0	0	0	0	0	0	0	20	-	0
		RPD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	18%	-	0%

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

			Complete OCP suite									Complete OPP suite			
			beta-BHC	Bromophos-ethyl	Chlorpyriphos-methyl	delta-BHC	Diazinon	Dimethoate	Endrin Aldehyde	Lindane	Heptachlor Epoxide	Azinphos methyl (Guthion)	Ethion	Fenitrothion	Ronnel (fenchlorphos)
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
BD3/20210501	0 m	01-May-21 15:00	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
303	0.1 - 0.2 m	01/05/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
		Difference	-	-	-	-	-	-	-	-	-	-	-	-	-
		RPD	-	-	-	-	-	-	-	-	-	-	-	-	-
BD9/20210501	0 m	01-May-21 15:00	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
309	1 - 1.1 m	01/05/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
		Difference	-	-	-	-	-	-	-	-	-	-	-	-	-
		RPD	-	-	-	-	-	-	-	-	-	-	-	-	-
BD7/20210501	0 m	01/05/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
319	0.4 - 0.5 m	01/05/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
		Difference	-	-	-	-	-	-	-	-	-	-	-	-	-
		RPD	-	-	-	-	-	-	-	-	-	-	-	-	-
BD8/20210501	0 m	01/05/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
319	2.4 - 2.5 m	01/05/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
		Difference	0	0	0	0	0	0	0	0	0	0	0	0	0
		RPD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Appendix D

Field Work and Sampling Methodology

Appendix D – Field Work and Sampling Methodology

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).

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 excavator bucket at the nominated sample depth or from the solid flight auger;
- Collect near surface samples using hand tools;
- Transfer samples in laboratory-prepared glass jars with Teflon lined lids by hand, capping immediately and minimising headspace within the sample jar;
- Transfer samples in laboratory-prepared container (specific for PFAS) by hand, capping immediately and minimising headspace within the sample jar;
- Collect replicate samples in zip-lock bags for PID screening;
- Collect ~500 ml samples for FA and AF analysis where signs of asbestos are observed;
- Collect bulk (~10 L) soil samples for ACM field sieve test;
- Collect ~40 g to 50 g samples in zip-lock bags for asbestos (presence / absence) analysis;
- 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.
-

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 using the PID.

Assessment of Subsurface ACM

A detailed asbestos assessment was not undertaken as part of this current investigation due to time restrictions. As such, the number of fragments observed were generally recorded on the relevant logs with an individual and unique identification detail, including project number, sample location and sample depth (where applicable). Samples of ~500 ml soil for FA and AF analysis were collected from the locations where asbestos fragments were observed and analysed. The following field procedure is recommended for any future asbestos assessments.

- Collect at least one bulk (~10 L) soil sample per metre of fill from each test pit / borehole;
- Weigh each bulk sample;
- Screen each bulk sample through a ≤7 mm aperture sieve;
- Weigh all retrieved potential ACM fragments; and
- Calculate the asbestos concentration (% w/w) in soil as per the procedure described in NEPC (2013).

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

Site Assessment Criteria

Appendix E – Site Assessment Criteria

The proposed development of the site will include the redevelopment of the public school (primary school) with land use remaining as a primary school. It is noted that the design of the redevelopment has not been confirmed at this stage.

The Site Assessment Criteria (SAC) applied in the current investigation is informed by the CSM which identified human and ecological receptors of potential contamination on the site (Section 5). Analytical results were assessed (as a Tier 1 assessment) against the SAC comprising the investigation and screening levels of Schedule B1, *National Environment Protection (Assessment of Site Contamination) Measure* 1999, as amended 2013 (NEPC, 2013). The NEPC guidelines are endorsed by the NSW EPA under the CLM Act 1997. Petroleum based health screening levels for direct contact have been adopted from the *Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) Technical Report no.10 Health screening levels for petroleum hydrocarbons in soil and groundwater* (2011) as referenced by NEPC (2013).

The investigation and screening levels are applicable to generic land use settings and include consideration of, where relevant, the soil type and the depth of contamination. The investigation and screening levels are not intended to be used as clean up levels. Rather, they establish concentrations above which further appropriate investigation (e.g., Tier 2 assessment) should be undertaken. They are intentionally conservative and are based on a reasonable worst-case scenario.

The investigation and screening levels applied in the current investigation comprise levels adopted are for a residential A (which includes primary schools) land use scenario.

E1 Soils

E1.1 Health Investigation and Screening Levels

The Health Investigation Levels (HIL) and Health Screening Levels (HSL) are scientifically-based, generic assessment criteria designed to be used in the first stage (Tier 1) of an assessment of potential human health risk from chronic exposure to contaminants.

HILs are applicable to assessing health risk arising *via* all relevant pathways of exposure for a range of metals and organic substances. The HIL are generic to all soil types and apply generally to a depth of 3 m below the surface for residential use. Site-specific conditions may determine the depth to which HILs apply for other land uses.

HSLs are applicable to selected petroleum compounds and fractions to assess the risk to human health via inhalation and direct contact pathways. HSL have been developed for different land uses, soil types and depths to contamination.

The generic HIL and HSL are considered to be appropriate for the assessment of contamination at the site. Given the proposed land use the adopted HIL and HSL are:

- **HIL- A** - residential A; and
- **HSL- A** - residential A.

In addition, the HSL adopted are predicated on the inputs summarised in Table E1.

Table E1: Inputs to the Derivation of HSLs

Variable	Input	Rationale
Potential exposure pathway	Ingestion Soil vapour intrusion (inhalation) Direct contact*	All three potential exposure pathways are identified in the CSM. It is noted that direct contact HSLs are generally not the risk drivers for further site assessment for the same contamination source as the HSLs for vapour intrusion (NEPM, 2013).
Soil Type	Clay	Silty clay, sandy clay and gravelly clay fill was generally recorded across the site.
Depth to contamination	0 m to <1 m	Filling comprising clay was generally present to depths ranging from 0 m to 3.8 m bgl and may be retained on site.

** Developed by CRC CARE (2011)*

The adopted soil HIL and HSL for the potential contaminants of concern are presented in Table E2.

Table E2: Health Investigation and Screening Levels (HIL and HSL) in mg/kg Unless Otherwise Indicated

Contaminants		HIL- A and HSL - A Direct Contact	HSL - A Vapour Intrusion
Metals	Arsenic	100	-
	Cadmium	20	-
	Chromium (VI)	100	-
	Copper	6,000	-
	Lead	300	-
	Mercury (inorganic)	40	-
	Nickel	400	-
	Zinc	7,400	-
PAH	Benzo(a)pyrene TEQ[1]	3	-
	Naphthalene	-	5
	Total PAH	300	-
TRH	F1	4,400[3]	50
	F2[3]	3,300[3]	280
	F3	4,500	-
	F4	6,300	-
BTEX	Benzene	100	0.7
	Toluene	14,000	480
	Ethylbenzene	4,500	NL
	Xylenes	12,000	110
Phenol	Pentachlorophenol	100	-
	Phenol	3,000	-
OCP	Aldrin + Dieldrin	6	-
	Chlordane	50	-
	DDT+DDE+DDD	240	-
	Endosulfan	270	-
	Endrin	10	-
	Heptachlor	6	-
	HCB	10	-
	Methoxychlor	300	-
OPP	Chlorpyrifos	160	-
PCB[2]		1	-

Notes:

1 sum of carcinogenic PAH
2 non dioxin-like PCBs only
3 HSL-A for fractions C6-10 includes BTEX and fraction C10-16 includes naphthalene

E1.2 Ecological Investigation Levels

Ecological Investigation Levels (EIL) have been derived for selected metals and organic compounds and are applicable for assessing risk to terrestrial ecosystems (NEPC, 2013). EIL depend on specific soil physiochemical properties and land use scenarios and generally apply to the top 2 m of soil, which corresponds to the root zone and habitation zone of many species. The EIL is determined for a

contaminant based on the sum of the ambient background concentration (ABC) and an added contaminant limit (ACL). The ABC of a contaminant is the soil concentration in a specific locality that is the sum of naturally occurring background levels and the contaminants levels that have been introduced from diffuse or non-point sources (e.g. motor vehicle emissions). The ACL is the added concentration (above the ABC) of a contaminant above which further appropriate investigation and evaluation of the impact on ecological values is required.

The EIL is calculated using the following formula:

EIL = ABC + ACL,

The ABC is determined through direct measurement at an appropriate reference site (preferred) or through the use of methods defined by Olszowy et al *Trace element concentrations in soils from rural and urban areas of Australia*, Contaminated Sites monograph no. 4, South Australian Health Commission, Adelaide, Australia 1995 (Olszowy, 1995) or Hamon et al, *Geochemical indices allow estimation of heavy metal background concentrations in soils*, Global Biogeochemical Cycles, vol. 18, GB1014, (Hamon, 2004). ACL is based on the soil characteristics of pH, CEC and clay content.

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

The adopted EIL, derived from Tables 1B (1) to 1B (5), Schedule B1 of NEPC (2013) the *Interactive (Excel) Calculation Spreadsheet* are shown in the following Table E3. The following site specific data and assumptions have been used to determine the EILs:

- A protection level of 95% of species has been adopted;
- The EILs will apply to the top 2 m of the soil profile;
- Given the likely source of soil contaminants (i.e., historical site use / fill) the contamination is considered as “aged” (>2 years);
- ABCs have been derived using the *Interactive (Excel) Calculation Spreadsheet* using input parameters of NSW for the State in which the site is located, and low for traffic volumes; and
- Site specific pH, and CEC values have been used as input parameters in the *Interactive (Excel) Calculation Spreadsheet*. Based on median pH and CEC values for soil types collected across the site, the soil profile (in the upper layers) has an average pH of 6.36 (range 6.2 to 6.5) and CEC of 10.36 cmol/kg (range 6.1 to 15).

Table E3: Ecological Investigation Levels (EIL) in mg/kg

Analyte		EIL[1]	Comments
Metals	Arsenic	100	Adopted parameters:
	Copper	210	pH of 6.36 (average tested)
	Nickel	180	
	Chromium III	680	CEC of 10.36 (average tested)
	Lead	1100	
	Zinc	430	Clay content of 48% (average tested)
PAH	Naphthalene	170	Iron not tested as EIL aged criteria was adopted
OCP	DDT	180	Traffic Volume: High

Notes: 1. ACL calculated for urban residential and public open space used as conservative EIL

E1.3 Ecological Screening Levels - Petroleum Hydrocarbons

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

ESL have been derived in NEPC (2013) for petroleum fractions F1 to F4 as well as BTEX and Benzo(a)pyrene. Site specific data and assumptions as summarised in Table E4 have been used to determine the ESL. The adopted ESL, from Table 1B (6), Schedule B1 of NEPC (2013) are shown in Table E5.

Table E4*:* Inputs to the Derivation of ESL

Variable	Input	Rationale
Depth of ESL application	Top 2 m of the soil profile	The top 2 m depth below ground level corresponds to the root zone and habitation zone of many species.
Land use	Urban residential and public open space	Proposed future land-use.
Soil Texture	Fine	The most conservative values based on filling present at the site.

Table E5: Ecological Screening Levels (ESL) in mg/kg

Analyte		ESL	Comments
TRH	F1	180*	All ESLs are low reliability apart from those marked with * which are moderate reliability
	F2	120*	
	F3	1300	
	F4	5600	
BTEX	Benzene	65	
	Toluene	105	
	Ethylbenzene	125	
	Xylenes	45	
PAH	Benzo(a)pyrene	0.7	

E1.4 Management Limits - Petroleum Hydrocarbons

In addition to appropriate consideration and application of the HSL, 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; and
- Effects on buried infrastructure e.g., penetration of, or damage to, in-ground services.

Management Limits to avoid or minimise these potential effects have been adopted in NEPC (2013) as interim Tier 1 guidance. Management Limits have been derived in NEPC (2013) for the same four petroleum fractions as the HSL (F1 to F4). The adopted Management Limits, from Table 1B (7), Schedule B1 of NEPC (2013) are shown in the following Table E6. The following site specific data and assumptions have been used to determine the Management Limits:

- The Management Limits will apply to any depth within the soil profile;
- The Management Limits for residential, parkland and public open space apply; and
- A fine soil texture has been adopted due to the presence of clay in filling as well as being the more conservative limits.

Table E6: Management Limits in mg/kg

Analyte		Management Limit
TRH	F1[#]	800
	F2[#]	1000
	F3	3500
	F4	10 000

Separate management limits for BTEX and naphthalene are not available hence these have not been subtracted from the relevant fractions to obtain F1 and F2

E1.5 Asbestos in Soil

Bonded asbestos-containing material (ACM) is the most common form of asbestos contamination across Australia, generally arising from:

- Inadequate removal and disposal practices during demolition of buildings containing asbestos products;
- Widespread dumping of asbestos products and asbestos containing fill on vacant land and development sites; and
- Commonly occurring in historical fill containing unsorted demolition materials.

Mining, manufacturing or distribution of asbestos products may result in sites being contaminated by friable asbestos including free fibres. Severe weathering or damage to bonded ACM may also result in the formation of friable asbestos comprising fibrous asbestos (FA) and/or asbestos fines (AF).

Asbestos only poses a risk to human health when asbestos fibres are made airborne and inhaled. If asbestos is bound in a matrix such as cement or resin, it is not readily made airborne except through substantial physical damage. Bonded ACM in sound condition represents a low human health risk, whilst both FA and AF materials have the potential to generate, or be associated with, free asbestos fibres. Consequently, FA and AF must be carefully managed to prevent the release of asbestos fibres into the air.

A detailed asbestos assessment was not undertaken as part of these works as asbestos was not identified in the samples taken during the previous investigation carried out by DP. The presence or absence of asbestos at a limit of reporting of 0.1 g/kg has been adopted for this assessment as an initial screen. However, as asbestos was identified in fill in the current investigation, the presence/absence of asbestos within the bonded ACM was adopted as a screen. Furthermore, the NEPC (2013) criteria for FA and AF for a residential A land use was adopted as a screening criteria for any soil samples collected in the vicinity of the ACM. NEPC (2013) defines the various asbestos types referred to above as follows:

Bonded ACM: Asbestos containing material which is in sound condition, bound in a matrix of cement or resin, and cannot pass a 7 mm x 7 mm sieve.

FA: Fibrous asbestos material including severely weathered cement sheet, insulation products and woven asbestos material. This material is typically unbonded or was previously bonded and is now significantly degraded and crumbling.

AF: Asbestos fines including free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.

Health Screening Levels (HSL) for asbestos in soil, which are based on likely exposure levels for different scenarios, have been adopted in NEPC (2013) from the Western Australian Department of Health (WA DoH) publication *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia 2009* (WA DoH 2009).

On the basis of the proposed land use, and in accordance with Table E7, Schedule B1, NEPC (2013) the following asbestos HSL is to be adopted for any future asbestos assessment (if required):

Table E7: Health Screening Levels for Asbestos Contamination in Soil (% w/w)

Form of Asbestos	HSL
	Residential A
Bonded ACM	0.01%
FA and AF	0.001 %
All Forms of Asbestos	No visible asbestos for surface soil

Appendix F

Summary Tables and Statistical Analysis

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Table F1A: Summary of Laboratory Results – Site Assessment Criteria (Metals, TRH, BTEX, PAH)

				Metals										TRH						BTEX				PAH					
				Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	TCLP Nickel	Zinc	TCLP 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]	TCLP Naphthalene [b]	Benzo(a)pyrene (BaP)	TCLP 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	0.001	0.05	0.001	0.5	0.05
Sample ID	Depth	Soil Matrix	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	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/L	mg/kg	mg/L	mg/kg	mg/kg
Site Assessment Criteria - Commercial Land Use																													
HIL A				100	20	100	6,000	300	40	400		7,400																3	300
HSL A&B	0- <1m	(clay)														50	280			0.7	480	NL	110	5					
EIL/ ESL	0-<2m	(fine)		100		680	140	1,100		65		320				180	120	1,300	5,600	65	105	125	45	170		0.7			
Management Limit		(fine)												800	1,000			3,500	10,000										
Direct Contact A														4,400	3,300			4,500	6,300	100	14,000	4,500	12,000	1,400					
Laboratory Results - Previus Investigation DP 2020a																													
BH101/0.1-0.2	0.1-0.2	FILL	20/01/2020	6	<0.4	20	10	46	<0.1	3	NT	13	NT	<25	<50	<25	<50	180	100	<0.2	<0.5	<1	<1	<1	NT	0.8	NT	1.2	5.8
BH102/0.1-0.2	0.1-0.2	FILL	20/01/2020	4	<0.4	13	28	77	0.1	9	NT	110	NT	<25	<50	<25	<50	200	130	<0.2	<0.5	<1	<1	<1	NT	0.06	NT	<0.5	0.3
BH102/1.0-1.45	1.0-1.45	Silty CLAY	20/01/2020	<4	<0.4	5	6	13	<0.1	<1	NT	<1	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
BH103/0.1-0.2	0.1-0.2	FILL	20/01/2020	<4	<0.4	13	12	22	<0.1	6	NT	34	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	0.2	NT	<0.5	2
BD2/20200120	-	-	20/01/2020	<4	<0.4	11	14	21	<0.1	6	NT	38	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	0.07	NT	<0.5	0.07
BH104/0.1-0.2	0.1-0.2	FILL	20/01/2020	4	<0.4	13	12	21	<0.1	5	NT	28	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
BH104/0.9-1.0	0.9-1.0	Silty CLAY	20/01/2020	<4	<0.4	14	4	12	<0.1	2	NT	3	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
BH105/0.1-0.2	0.1-0.2	FILL	20/01/2020	6	<0.4	17	15	28	<0.1	4	NT	17	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	0.3	NT	<0.5	1.9
BH106/0.25-0.3	0.25-0.3	Silty CLAY	20/01/2020	6	<0.4	14	23	13	<0.1	14	NT	41	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
BH107/0.1-0.2	0.1-0.2	FILL	20/01/2020	5	<0.4	22	7	16	<0.1	2	NT	6	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	0.06	NT	<0.5	0.06
BH108/0.1-0.2	0.1-0.2	FILL	20/01/2020	6	<0.4	18	11	19	<0.1	4	NT	14	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	0.2	NT	<0.5	1.8
BH109/0.1-0.2	0.1-0.2	FILL	20/01/2020	<4	<0.4	11	30	12	<0.1	26	NT	49	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	0.06	NT	<0.5	0.06
BH109/0.4-0.5	0.4-0.5	Silty CLAY	20/01/2020	8	<0.4	17	24	17	<0.1	8	NT	27	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
BH109/0.9-1.0	0.9-1.0	Silty CLAY	20/01/2020	7	<0.4	12	24	17	<0.1	3	NT	19	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
BH110/0.1-0.2	0.1-0.2	FILL	20/01/2020	5	<0.4	12	19	25	<0.1	7	NT	99	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
BH110/0.9-1.0	0.9-1.0	FILL	20/01/2020	7	<0.4	10	14	21	<0.1	1	NT	10	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	0.09	NT	<0.5	0.09
Laboratory Results - Previous Investigation DP 2020b																													
BH201/0.9-1.0	0.9-1.0	FILL	21/01/2020	4	<0.4	7	26	13	<0.1	2	NT	6	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
BH201/2.3-2.4	2.3-2.4	FILL	21/01/2020	4	<0.4	12	34	18	<0.1	5	NT	32	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
BH202/0.1-0.2	0.1-0.2	FILL	21/01/2020	6	<0.4	18	23	48	<0.1	15	NT	60	NT	<25	<50	<25	<50	210	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
BH203/0.4-0.5	0.4-0.5	FILL	21/01/2020	5	<0.4	14	21	23	<0.1	8	NT	37	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
BH203/0.9-1.0	0.9-1.0	FILL	21/01/2020	<4	<0.4	9	26	29	<0.1	4	NT	26	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
BH207/0.4-0.5	0.4-0.5	FILL	21/01/2020	7	<0.4	13	22	28	<0.1	6	NT	31	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
BD3/20200121	0.4-0.5	FILL	21/01/2020	7	<0.4	15	13	23	<0.1	8	NT	21	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
BH208/0.4-0.5	0.4-0.5	FILL	21/01/2020	6	<0.4	18	58	39	<0.1	5	NT	79	NT	<25	<50	<25	<50	110	<100	<0.2	<0.5	<1	<1	<1	<0.001	1.4	<0.001	2.2	21

Table F1A: Summary of Laboratory Results – Site Assessment Criteria (Metals, TRH, BTEX, PAH)

				Metals										TRH						BTEX				PAH					
				Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	TCLP Nickel	Zinc	TCLP 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]	TCLP Naphthalene [b]	Benzo(a)pyrene (BaP)	TCLP 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	0.001	0.05	0.001	0.5	0.05
Sample ID	Depth	Soil Matrix	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	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/L	mg/kg	mg/L	mg/kg	mg/kg
Site Assessment Criteria - Commercial Land Use																													
HIL A				100	20	100	6,000	300	40	400		7,400																3	300
HSL A&B	0- <1m	(clay)														50	280			0.7	480	NL	110	5					
EIL/ ESL	0-<2m	(fine)		100		680	140	1,100		65		320				180	120	1,300	5,600	65	105	125	45	170		0.7			
Management Limit		(fine)												800	1,000			3,500	10,000										
Direct Contact A														4,400	3,300			4,500	6,300	100	14,000	4,500	12,000	1,400					
Laboratory Results - Current Investigation																													
301	0.1 - 0.2 m	FILL	01/05/2021	**7**	<0.4	**28**	**11**	**24**	<0.1	**5**	NT	**18**	NT	<25	<50	<25	<50	**140**	<100	<0.2	<0.5	<1	<1	<1	NT	**0.07**	NT	<0.5	**0.07**
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
302	0.4 - 0.5 m	FILL	01/05/2021	**8**	<0.4	**27**	**13**	**25**	<0.1	**4**	NT	**37**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
302	0.7 - 0.8 m	Silty CLAY	01/05/2021	**9**	<0.4	**28**	**16**	**20**	<0.1	**2**	NT	**5**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
303	0.1 - 0.2 m	FILL	01/05/2021	**5**	<0.4	**18**	**13**	**32**	<0.1	**6**	NT	**27**	NT	<25	<50	<25	<50	**160**	<100	<0.2	<0.5	<1	<1	<1	NT	**0.2**	NT	<0.5	**1.6**
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
304	0.1 - 0.2 m	FILL	01/05/2021	**9**	<0.4	**23**	**17**	**23**	<0.1	**3**	NT	**14**	NT	<25	<50	<25	<50	**100**	<100	<0.2	<0.5	<1	<1	<1	NT	**0.05**	NT	<0.5	**0.05**
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
305	0.1 - 0.2 m	FILL	01/05/2021	**6**	<0.4	**20**	**17**	**40**	<0.1	**6**	NT	**50**	NT	<25	<50	<25	<50	**110**	<100	<0.2	<0.5	<1	<1	<1	NT	**0.4**	NT	**0.5**	**3.2**
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
306	0.1 - 0.2 m	FILL	01/05/2021	**4**	<0.4	**14**	**19**	**79**	<0.1	**6**	NT	**100**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	**0.1**	NT	<0.5	**1**
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
307	0.1 - 0.2 m	FILL	01/05/2021	**7**	<0.4	**19**	**23**	**33**	<0.1	**9**	NT	**46**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	**0.1**	NT	<0.5	**1**
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
308	0.1 - 0.2 m	FILL	01/05/2021	**6**	<0.4	**20**	**19**	**27**	<0.1	**6**	NT	**27**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	**0.09**	NT	<0.5	**0.5**
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
309	0.2 - 0.3 m	FILL	01/05/2021	**9**	<0.4	**19**	**18**	**47**	<0.1	**7**	NT	**46**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	**0.2**	NT	<0.5	**2.3**
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
309	1 - 1.1 m	Silty CLAY	01/05/2021	**5**	<0.4	**8**	**19**	**34**	<0.1	**2**	NT	**10**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	70 180	240 -	- 300	- 2800	0.5 50	220 85	NL 70	60 105	NL 170	- -	- 0.7	- -	3 -	300 -
BD9/20210501	1 - 1.1 m	Silty CLAY	01/05/2021	<5	<1	**5**	**13**	**28**	<0.1	<2	NT	<5	NT	<10	<50	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1	NT	<0.5	NT	<0.5	<0.5
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	70 180	240 -	- 300	- 2800	0.5 50	220 85	NL 70	60 105	NL 170	- -	- 0.7	- -	3 -	300 -
310	0.2 - 0.3 m	FILL	01/05/2021	**5**	<0.4	**15**	**8**	**72**	<0.1	**4**	NT	**43**	NT	<25	<50	<25	<50	**170**	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
310	0.8 - 0.9 m	Silty CLAY	01/05/2021	**5**	<0.4	**18**	**6**	**14**	<0.1	**2**	NT	**10**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	70 180	240 -	- 300	- 2800	0.5 50	220 85	NL 70	60 105	NL 170	- -	- 0.7	- -	3 -	300 -
311	0.4 - 0.5 m	FILL	01/05/2021	**7**	<0.4	**15**	**9**	**14**	<0.1	**3**	NT	**23**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
312	0.7 - 0.8 m	FILL	01/05/2021	<4	<0.4	**6**	**22**	**20**	<0.1	**5**	NT	**20**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
312	1.3 - 1.4 m	FILL	01/05/2021	**7**	<0.4	**17**	**22**	**20**	<0.1	**1**	NT	**8**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	70 180	240 -	- 300	- 2800	0.5 50	220 85	NL 70	60 105	NL 170	- -	- 0.7	- -	3 -	300 -
313	0.1 - 0.2 m	FILL	01/05/2021	**5**	<0.4	**12**	**12**	**16**	<0.1	**4**	NT	**23**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
BD4/20210501	0.1 - 0.2 m	FILL	01/05/2021	<5	<1	**10**	**11**	**16**	<0.1	**5**	NT	**23**	NT	<10	<50	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1	NT	<0.5	NT	<0.5	<0.5
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
313-A9	0.3 - 0.4 m	Material	01/05/2021	-	-	-	-	-	-	-	NT	-	NT	-	-	-	-	-	-	-	-	-	-	NT	-	NT	-	-	-
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
313	0.9 - 1 m	FILL	01/05/2021	**5**	<0.4	**18**	**8**	**18**	<0.1	**6**	NT	**19**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
314	0.4 - 0.5 m	FILL	01/05/2021	**5**	<0.4	**13**	**22**	**12**	<0.1	**12**	NT	**36**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
314-A1	0.9 - 1.0 m	Material	01/05/2021	-	-	-	-	-	-	-	NT	-	NT	-	-	-	-	-	-	-	-	-	-	NT	-	NT	-	-	-
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
314	1.3 - 1.4 m	FILL	01/05/2021	**5**	**0.5**	**27**	**45**	**49**	<0.1	21	NT	**92**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	70 180	240 -	- 300	- 2800	0.5 50	220 85	NL 70	60 105	NL 170	- -	- 0.7	- -	3 -	300 -
314	1.9 - 2 m	Silty Gravelly CLAY	01/05/2021	**8**	<0.4	**10**	**32**	**19**	<0.1	**6**	NT	**39**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	70 180	240 -	- 300	- 2800	0.5 50	220 85	NL 70	60 105	NL 170	- -	- 0.7	- -	3 -	300 -
315	0 - 0.1 m	FILL	01/05/2021	**4**	<0.4	**12**	**15**	**26**	<0.1	**7**	NT	**60**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
315-A4	0.6 - 0.7 m	Material	01/05/2021	-	-	-	-	-	-	-	NT	-	NT	-	-	-	-	-	-	-	-	-	-	NT	-	NT	-	-	-
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
315	0.6 - 0.7 m	FILL	01/05/2021	**5**	<0.4	**15**	**24**	**31**	<0.1	**9**	NT	**59**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
316	0.4 - 0.5 m	FILL	01/05/2021	<4	<0.4	**8**	**9**	**11**	<0.1	**7**	NT	**27**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
317	0 - 0.1 m	FILL	01/05/2021	**16**	<0.4	**15**	**24**	**48**	<0.1	**10**	NT	**74**	NT	<25	<50	<25	<50	**190**	**110**	<0.2	<0.5	<1	<1	<1	NT	**0.05**	NT	<0.5	**0.2**
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
318	0 - 0.1 m	FILL	01/05/2021	**4**	<0.4	**9**	**20**	**36**	<0.1	**5**	NT	**54**	NT	<25	<50	<25	<50	**120**	**100**	<0.2	<0.5	<1	<1	<1	NT	**0.07**	NT	<0.5	**0.3**
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -

Table F1A: Summary of Laboratory Results – Site Assessment Criteria (Metals, TRH, BTEX, PAH)

				Metals										TRH						BTEX				PAH					
				Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	TCLP Nickel	Zinc	TCLP 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]	TCLP Naphthalene [b]	Benzo(a)pyrene (BaP)	TCLP 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	0.001	0.05	0.001	0.5	0.05
Sample ID	Depth	Soil Matrix	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	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/L	mg/kg	mg/L	mg/kg	mg/kg
Site Assessment Criteria - Commercial Land Use																													
HIL A				100	20	100	6,000	300	40	400		7,400																3	300
HSL A&B	0- <1m	(clay)														50	280			0.7	480	NL	110	5					
EIL/ ESL	0-<2m	(fine)		100		680	140	1,100		65		320				180	120	1,300	5,600	65	105	125	45	170		0.7			
Management Limit		(fine)												800	1,000			3,500	10,000										
Direct Contact A														4,400	3,300			4,500	6,300	100	14,000	4,500	12,000	1,400					
319	0.2 - 0.3 m	FILL	01/05/2021	**5**	<0.4	**12**	**15**	**26**	<0.1	**5**	NT	**27**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
319	0.4 - 0.5 m	FILL	01/05/2021	**9**	<0.4	**26**	**15**	**23**	<0.1	**5**	NT	**32**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
BD7/20210501	0.4 - 0.5 m	FILL	01/05/2021	**8**	<0.4	**21**	**12**	**20**	<0.1	**3**	NT	**14**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
319	1.3 - 1.4 m	FILL	01/05/2021	<4	<0.4	**8**	**23**	**13**	<0.1	**2**	NT	**12**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	70 180	240 -	- 300	- 2800	0.5 50	220 85	NL 70	60 105	NL 170	- -	- 0.7	- -	3 -	300 -
319	1.9 - 2 m	FILL	01/05/2021	**6**	<0.4	**15**	**17**	**62**	**0.4**	**3**	NT	**30**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	70 180	240 -	- 300	- 2800	0.5 50	220 85	NL 70	60 105	NL 170	- -	- 0.7	- -	3 -	300 -
319	2.4 - 2.5 m	Silty CLAY	01/05/2021	**11**	<0.4	**14**	**14**	**35**	<0.1	**4**	NT	**38**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	110 180	440 -	- 300	- 2800	0.5 50	310 85	NL 70	95 105	NL 170	- -	- 0.7	- -	3 -	300 -
BD8/20210501	2.4 - 2.5 m	Silty CLAY	01/05/2021	**7**	<0.4	**18**	**24**	**83**	<0.1	**5**	NT	**160**	NT	<25	<50	<25	<50	**150**	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
320	0.4 - 0.5 m	FILL	01/05/2021	**9**	<0.4	**24**	**22**	**35**	<0.1	**110**	NT	**48**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
320-A7	0.9 - 1 m	Material	01/05/2021	-	-	-	-	-	-	-	NT	-	NT	-	-	-	-	-	-	-	-	-	-	-	NT	-	NT	-	-
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
320	0.9 - 1 m	FILL	01/05/2021	**7**	<0.4	**14**	**17**	**21**	<0.1	**11**	NT	**24**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
321	0.4 - 0.5 m	FILL	01/05/2021	**9**	<0.4	**14**	**21**	**23**	<0.1	**8**	NT	**42**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
322	0 - 0.1 m	FILL	01/05/2021	<4	<0.4	**25**	**25**	**48**	<0.1	**28**	NT	**93**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
323	0.9 - 1 m	FILL	01/05/2021	<4	<0.4	**17**	**26**	**13**	<0.1	**16**	NT	**28**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
323	1.9 - 2 m	FILL	01/05/2021	**6**	<0.4	**14**	**18**	**62**	<0.1	**6**	NT	**33**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	70 180	240 -	- 300	- 2800	0.5 50	220 85	NL 70	60 105	NL 170	- -	- 0.7	- -	3 -	300 -
323	2.4 - 2.5 m	FILL	01/05/2021	**6**	<0.4	**10**	**28**	**23**	<0.1	**8**	NT	**48**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	110 180	440 -	- 300	- 2800	0.5 50	310 85	NL 70	95 105	NL 170	- -	- 0.7	- -	3 -	300 -
324	0.9 - 1 m	FILL	01/05/2021	**8**	<0.4	**15**	**13**	**22**	<0.1	**2**	NT	**8**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
324	1.1 - 1.2 m	FILL	01/05/2021	**8**	<0.4	**12**	**18**	**29**	<0.1	**5**	NT	**33**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	**0.07**	NT	<0.5	**0.82**
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	70 180	240 -	- 300	- 2800	0.5 50	220 85	NL 70	60 105	NL 170	- -	- 0.7	- -	3 -	300 -
235	0.4 - 0.5 m	FILL	01/05/2021	**5**	<0.4	**14**	**20**	**38**	<0.1	**7**	NT	**45**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
326	0 - 0.1 m	FILL	01/05/2021	<4	<0.4	**7**	**15**	**18**	<0.1	**7**	NT	**45**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -
326	0.3 - 0.4 m	SILTSTONE	01/05/2021	<4	<0.4	**4**	**16**	**14**	**0.1**	**3**	NT	**22**	NT	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NT	<0.05	NT	<0.5	<0.05
				100 100	20 -	100 680	6000 140	300 1100	40 -	400 65	- -	7400 320	- -	- -	- -	- 120	45 180	110 -	- 300	- 2800	0.5 50	160 85	55 70	40 105	3 170	- -	- 0.7	- -	3 -	300 -

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, refer to the lab report **Blue** = DC exceedance HSL 0-<1 Exceedance

Bold = Lab detections - = Not tested or No HIL/HSL/EIL/ESL (as applicable) or Not applicable NL = Non limiting AD = Asbestos detected NAD = No Asbestos detected

HIL = Health investigation level HSL = Health screening level (excluding DC) EIL = Ecological investigation level ESL = Ecological screening level ML = Management Limit DC = Direct Contact HSL

Notes:

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

d Analysis result for total Cr, HIL for Cr(VI), EIL for Cr(III)

e QA/QC replicate of sample listed directly below the primary sample

Site Assessment Criteria (SAC):

Refer to the SAC section of report for information of SAC sources and rationale. Summary information as follows:

SAC based on generic land use thresholds for Residential A with garden/accessible soil

HIL A	Residential / Low - High Density (NEPC, 2013)
HSL A/B	Residential / Low - High Density (vapour intrusion) (NEPC, 2013)
DC HSL A	Direct contact HSL A Residential (Low density) (direct contact) (CRC CARE, 2011)
EIL/ESL UR/POS	Urban Residential and Public Open Space (NEPC, 2013)
ML R/P/POS	Residential, Parkland and Public Open Space (NEPC, 2013)

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Table F1B: Summary of Laboratory Results – Site Assessment Criteria (Phenol, OCP, OPP, PCB, Asbestos, Asbestos)

				Phenol									OPP	PCB		Asbestos					
				Phenol [e]	DDT+DDE+DDD [c]	Aldrin & Dieldrin	Total Chlordane	Total Endosulfan	Endrin	Heptachlor	Hexachlorobenzene	Methoxychlor	Chlorpyriphos	Total PCB	Atrazene (Herbicide) [e]	Asbestos ID in soil (40g)	Asbestos ID in soil (500ml sample) <0.1g/kg	ACM >7mm Estimation	FA and AF Estimation	FA and AF Estimation	Asbestos ID in material
			PQL	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5					<0.001	<0.001
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	-	-	g	g	%(w/w)	%(w/w)
Site Assessment Criteria - Residential Land Use																					
HIL A				100	240	6	50	270	10	6	10	300	160	1	320	NIL					
HSL A&B	0 - <1m	(clay)																			
EIL/ ESL	0-<2m	(fine)			180 [c]																
Management Limit		(fine)																			
Direct Contact A				3,000																	
Laboratory Results - Previous Investigation DP 2020a																					
BH101/0.1-0.2	0.1-0.2	FILL	20/01/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BH102/0.1-0.2	0.1-0.2	FILL	20/01/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BH102/1.0-1.45	1.0-1.45	Silty CLAY	20/01/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BH103/0.1-0.2	0.1-0.2	FILL	20/01/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BD2/20200120	-	-	20/01/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BH104/0.1-0.2	0.1-0.2	FILL	20/01/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BH104/0.9-1.0	0.9-1.0	Silty CLAY	20/01/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BH105/0.1-0.2	0.1-0.2	FILL	20/01/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BH106/0.25-0.3	0.25-0.3	Silty CLAY	20/01/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BH107/0.1-0.2	0.1-0.2	FILL	20/01/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BH108/0.1-0.2	0.1-0.2	FILL	20/01/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BH109/0.1-0.2	0.1-0.2	FILL	20/01/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BH109/0.4-0.5	0.4-0.5	Silty CLAY	20/01/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BH109/0.9-1.0	0.9-1.0	Silty CLAY	20/01/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BH110/0.1-0.2	0.1-0.2	FILL	20/01/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BH110/0.9-1.0	0.9-1.0	FILL	20/01/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
Laboratory Results - Previous Investigation DP 2020b																					
BH201/0.9-1.0	0.9-1.0	FILL	21/01/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BH201/2.3-2.4	2.3-2.4	FILL	21/01/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BH202/0.1-0.2	0.1-0.2	FILL	21/01/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BH203/0.4-0.5	0.4-0.5	FILL	21/01/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BH203/0.9-1.0	0.9-1.0	FILL	21/01/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BH207/0.4-0.5	0.4-0.5	FILL	21/01/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BD3/20200121	-	-	21/01/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						
BH208/0.4-0.5	0.4-0.5	FILL	21/01/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	270 -	10 -	6 -	10 -	300 -	160 -	1 -	1 -						

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Table F1B: Summary of Laboratory Results – Site Assessment Criteria (Phenol, OCP, OPP, PCB, Asbestos, Asbestos)

				Phenol									OPP	PCB		Asbestos					
				Phenol [e]	DDT+DDE+DDD [c]	Aldrin & Dieldrin	Total Chlordane	Total Endosulfan	Endrin	Heptachlor	Hexachlorobenzene	Methoxychlor	Chlorpyriphos	Total PCB	Atrazene (Herbicide) [e]	Asbestos ID in soil (40g)	Asbestos ID in soil (500ml sample) <0.1g/kg	ACM >7mm Estimation	FA and AF Estimation	FA and AF Estimation	Asbestos ID in material
			PQL	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5					<0.001	<0.001
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	-	-	g	g	%(w/w)	%(w/w)
Site Assessment Criteria - Residential Land Use																					
HIL A				100	240	6	50	270	10	6	10	300	160	1	320	NIL					
HSL A&B	0 - <1m	(clay)																			
EIL/ ESL	0-<2m	(fine)			180 [c]																
Management Limit		(fine)																			
Direct Contact A				3,000																	
Laboratory Results - Current Investigation																					
301	0.1 - 0.2 m	FILL	01/05/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
302	0.4 - 0.5 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
302	0.7 - 0.8 m	Silty CLAY	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NT	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
303	0.1 - 0.2 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
304	0.1 - 0.2 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
305	0.1 - 0.2 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
306	0.1 - 0.2 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
307	0.1 - 0.2 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
308	0.1 - 0.2 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
309	0.2 - 0.3 m	FILL	01/05/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
309	1 - 1.1 m	Silty CLAY	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NT	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
BD9/20210501	1 - 1.1 m	Silty CLAY	01/05/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
310	0.2 - 0.3 m	FILL	01/05/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
310	0.8 - 0.9 m	Silty CLAY	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NT	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
311	0.4 - 0.5 m	FILL	01/05/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
312	0.7 - 0.8 m	FILL	01/05/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
312	1.3 - 1.4 m	FILL	01/05/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
313	0.1 - 0.2 m	FILL	01/05/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	NT	NAD	NAD	NAD	<0.001	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
BD4/20210501	0.1 - 0.2 m	FILL	01/05/2021	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
313-A9	0.3 - 0.4 m	Material	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NT	NT	NT	NT	NT	**Chrysotile**
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
313	0.9 - 1 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
314	0.4 - 0.5 m	FILL	01/05/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
314-A1	0 m	Material	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NT	NT	NT	NT	NT	**Chrysotile**
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
314	1.3 - 1.4 m	FILL	01/05/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NT	NT	NAD	NAD	NAD	<0.001	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
314	1.9 - 2 m	Silty Gravelly CLAY	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NT	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
315	0 - 0.1 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
315-A4	0.6-0.7	Material	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NT	NT	NT	NT	NT	**Chrysotile**
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
315	0.6 - 0.7 m	FILL	01/05/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NT	NT	**AD***	**AD***	NAD	<0.001	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
316	0.4 - 0.5 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
317	0 - 0.1 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						

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Table F1B: Summary of Laboratory Results – Site Assessment Criteria (Phenol, OCP, OPP, PCB, Asbestos, Asbestos)

				Phenol									OPP	PCB		Asbestos					
				Phenol [e]	DDT+DDE+DDD [c]	Aldrin & Dieldrin	Total Chlordane	Total Endosulfan	Endrin	Heptachlor	Hexachlorobenzene	Methoxychlor	Chlorpyriphos	Total PCB	Atrazene (Herbicide) [e]	Asbestos ID in soil (40g)	Asbestos ID in soil (500ml sample) <0.1g/kg	ACM >7mm Estimation	FA and AF Estimation	FA and AF Estimation	Asbestos ID in material
			PQL	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5					<0.001	<0.001
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	-	-	g	g	%(w/w)	%(w/w)
Site Assessment Criteria - Residential Land Use																					
HIL A				100	240	6	50	270	10	6	10	300	160	1	320	NIL					
HSL A&B	0 - <1m	(clay)																			
EIL/ ESL	0-<2m	(fine)			180 [c]																
Management Limit		(fine)																			
Direct Contact A				3,000																	
318	0 - 0.1 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
319	0.2 - 0.3 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
319	0.4 - 0.5 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
BD7/20210501	0.4 - 0.5 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NT	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
319	1.3 - 1.4 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NT	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
319	1.9 - 2 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
319	2.4 - 2.5 m	Silty CLAY	01/05/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
BD8/20210501	2.4 - 2.5 m	Silty CLAY	01/05/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NT	NT	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
320	0.4 - 0.5 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
320-A7	0.9 - 1 m	Material	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NT	NT	NT	NT	NT	NT	**Chrysotile**
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
320	0.9 - 1 m	FILL	01/05/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NT	NT	NAD	NAD	NAD	<0.001	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
321	0.4 - 0.5 m	FILL	01/05/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
322	0 - 0.1 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	<0.5	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
323	0.9 - 1 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
323	1.9 - 2 m	FILL	01/05/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
323	2.4 - 2.5 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
324	0.9 - 1 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
324	1.1 - 1.2 m	FILL	01/05/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
235	0.4 - 0.5 m	FILL	01/05/2021	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
326	0 - 0.1 m	FILL	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NAD	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						
326	0.3 - 0.4 m	SILTSTONE	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	NT	NT	NT	NT	NT	NT	NT
				100 -	240 180	6 -	50 -	10 -	270 -	6 -	10 -	300 -	160 -	1 -	1 -						

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, refer to the lab report **Blue** = DC exceedance HSL 0-<1 Exceedance

Bold = Lab detections - = Not tested or No HIL/HSL/EIL/ESL (as applicable) or Not applicable NL = Non limiting AD = Asbestos detected NAD = No Asbestos detected

HIL = Health investigation level HSL = Health screening level (excluding DC) EIL = Ecological investigation level ESL = Ecological screening level ML = Management Limit DC = Direct Contact HSL

Notes:

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

d Analysis result for total Cr, HIL for Cr(VI), EIL for Cr(III)

e Pentachlorophenol criteria used as intial screen for phenol, Atrazine used as an initial screen for herbicides

* Chrysotile asbestos >7mm detected (0.0817g) detected in sample 315/0.6-0.7

Site Assessment Criteria (SAC):

Refer to the SAC section of report for information of SAC sources and rationale. Summary information as follows:

SAC based on generic land use thresholds for Residential A with garden/accessible soil

HIL A	Residential / Low - High Density (NEPC, 2013)
HSL A/B	Residential / Low - High Density (vapour intrusion) (NEPC, 2013)
DC HSL A	Direct contact HSL A Residential (Low density) (direct contact) (CRC CARE, 2011)
EIL/ESL UR/POS	Urban Residential and Public Open Space (NEPC, 2013)
ML R/P/POS	Residential, Parkland and Public Open Space (NEPC, 2013)

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Table F2: Summary of Laboratory Results – Waste Classification Criteria

				Metals									TRH		BTEX										
				Arsenic	Cadmium	Total Chromium	Copper	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
			PQL	4	0.4	1	1	1	0.1	1		1	25	50	0.2	0.5	1	2	1	3	0.05	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/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
Waste Classification Criteria [f]																									
CT1				100	20	100	NC	100	4	40	N/A	NC	650	10000	10	288	600	NC	NC	1000	0.8	NC	NC	NC	NC
SCC1				500	100	1900	NC	1500	50	1050	N/A	NC	650	10000	18	518	1080	NC	NC	1800	10	NC	NC	NC	NC
TCLP1				N/A	N/A	N/A	NC	N/A	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
Published Background Levels																									
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 - Previus Investigation DP 2020a																									
BH101/0.1-0.2	0.1-0.2	FILL	20/01/2020	6	<0.4	20	10	46	<0.1	3	-	13	<25	120	<0.2	<0.5	<1	<2	<1	<3	0.8	<0.1	<0.1	<0.1	0.7
BH102/0.1-0.2	0.1-0.2	FILL	20/01/2020	4	<0.4	13	28	77	0.1	9	-	110	<25	240	<0.2	<0.5	<1	<2	<1	<3	0.06	<0.1	<0.1	<0.1	<0.1
BH103/0.1-0.2	0.1-0.2	FILL	20/01/2020	<4	<0.4	13	12	22	<0.1	6	-	34	<25	<50	<0.2	<0.5	<1	<2	<1	<3	0.2	<0.1	<0.1	<0.1	0.3
BD2/20200120	-	-	20/01/2020	<4	<0.4	11	14	21	<0.1	6	-	10	<25	<50	<0.2	<0.5	<1	<2	<1	<3	0.07	<0.1	<0.1	<0.1	<0.1
BH104/0.1-0.2	0.1-0.2	FILL	20/01/2020	4	<0.4	13	14	21	<0.1	5	-	38	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
BH105/0.1-0.2	0.1-0.2	FILL	20/01/2020	6	<0.4	17	4	28	<0.1	4	-	3	<25	<50	<0.2	<0.5	<1	<2	<1	<3	0.3	<0.1	<0.1	<0.1	0.2
BH107/0.1-0.2	0.1-0.2	FILL	20/01/2020	5	<0.4	22	24	16	<0.1	2	-	27	<25	<50	<0.2	<0.5	<1	<2	<1	<3	0.06	<0.1	<0.1	<0.1	<0.1
BH108/0.1-0.2	0.1-0.2	FILL	20/01/2020	6	<0.4	18	7	19	<0.1	4	-	6	<25	<50	<0.2	<0.5	<1	<2	<1	<3	0.2	<0.1	<0.1	<0.1	0.2
BH109/0.1-0.2	0.1-0.2	FILL	20/01/2020	<4	<0.4	11	23	12	<0.1	26	-	41	<25	<50	<0.2	<0.5	<1	<2	<1	<3	0.06	<0.1	<0.1	<0.1	<0.1
BH110/0.1-0.2	0.1-0.2	FILL	20/01/2020	5	<0.4	12	30	25	<0.1	7	-	49	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
BH110/0.9-1.0	0.9-1.0	FILL	20/01/2020	7	<0.4	10	19	21	<0.1	1	-	99	<25	<50	<0.2	<0.5	<1	<2	<1	<3	0.09	<0.1	<0.1	<0.1	<0.1
BH102/1.0-1.45	1.0-1.45	Silty CLAY	20/01/2020	<4	<0.4	5	6	13	<0.1	<1	-	<1	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
BH104/0.9-1.0	0.9-1.0	Silty CLAY	20/01/2020	<4	<0.4	14	12	12	<0.1	2	-	28	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
BH106/0.25-0.3	0.25-0.3	Silty CLAY	20/01/2020	6	<0.4	14	11	13	<0.1	14	-	14	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
BH109/0.4-0.5	0.4-0.5	Silty CLAY	20/01/2020	8	<0.4	17	15	17	<0.1	8	-	17	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
BH109/0.9-1.0	0.9-1.0	Silty CLAY	20/01/2020	7	<0.4	12	24	17	<0.1	3	-	19	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
Laboratory Results - Previus Investigation DP 2020b																									
BH201/0.9-1.0	0.9-1.0	FILL	21/01/2020	**4**	<0.4	**7**	**26**	**13**	<0.1	**2**	-	**6**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
BH201/2.3-2.4	2.3-2.4	FILL	21/01/2020	**4**	<0.4	**12**	**34**	**18**	<0.1	**5**	-	**32**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
BH202/0.1-0.2	0.1-0.2	FILL	21/01/2020	**6**	<0.4	**18**	**23**	**48**	<0.1	**15**	-	**60**	<25	**260**	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
BH203/0.4-0.5	0.4-0.5	FILL	21/01/2020	**5**	<0.4	**14**	**21**	**23**	<0.1	**8**	-	**37**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
BH203/0.9-1.0	0.9-1.0	FILL	21/01/2020	<4	<0.4	**9**	**26**	**29**	<0.1	**4**	-	**26**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
BH207/0.4-0.5	0.4-0.5	FILL	21/01/2020	**7**	<0.4	**13**	**22**	**28**	<0.1	**6**	-	**31**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
BD3/20200121	0.4-0.5	FILL	21/01/2020	**7**	<0.4	**15**	**13**	**23**	<0.1	**8**	-	**21**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
BH208/0.4-0.5	0.4-0.5	FILL	21/01/2020	**6**	<0.4	**18**	**58**	**39**	<0.1	**5**	-	**79**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	**1.4**	<0.1	**0.4**	**0.8**	**1.8**
Laboratory Results - Current Investigation																									
301	0.1 - 0.2 m	FILL	01/05/2021	**7**	<0.4	**28**	**11**	**24**	<0.1	**5**	-	**18**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	**0.07**	<0.1	<0.1	<0.1	<0.1
302	0.4 - 0.5 m	FILL	01/05/2021	**8**	<0.4	**27**	**13**	**25**	<0.1	**4**	-	**37**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
302	0.7 - 0.8 m	Silty CLAY	01/05/2021	**9**	<0.4	**28**	**16**	**20**	<0.1	**2**	-	**5**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
303	0.1 - 0.2 m	FILL	01/05/2021	**5**	<0.4	**18**	**13**	**32**	<0.1	**6**	-	**27**	<25	**120**	<0.2	<0.5	<1	<2	<1	<3	**0.2**	<0.1	<0.1	<0.1	**0.2**
304	0.1 - 0.2 m	FILL	01/05/2021	**9**	<0.4	**23**	**17**	**23**	<0.1	**3**	-	**14**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	**0.05**	<0.1	<0.1	<0.1	<0.1
305	0.1 - 0.2 m	FILL	01/05/2021	**6**	<0.4	**20**	**17**	**40**	<0.1	**6**	-	**50**	<25	**100**	<0.2	<0.5	<1	<2	<1	<3	**0.4**	<0.1	<0.1	<0.1	**0.4**
306	0.1 - 0.2 m	FILL	01/05/2021	**4**	<0.4	**14**	**19**	**79**	<0.1	**6**	-	**100**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	**0.1**	<0.1	<0.1	<0.1	**0.2**
307	0.1 - 0.2 m	FILL	01/05/2021	**7**	<0.4	**19**	**23**	**33**	<0.1	**9**	-	**46**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	**0.1**	<0.1	<0.1	<0.1	**0.1**
308	0.1 - 0.2 m	FILL	01/05/2021	**6**	<0.4	**20**	**19**	**27**	<0.1	**6**	-	**27**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	**0.09**	<0.1	<0.1	<0.1	<0.1
309	0.2 - 0.3 m	FILL	01/05/2021	**9**	<0.4	**19**	**18**	**47**	<0.1	**7**	-	**46**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	**0.2**	<0.1	<0.1	<0.1	**0.4**
309	1 - 1.1 m	Silty CLAY	01/05/2021	**5**	<0.4	**8**	**19**	**34**	<0.1	**2**	-	**10**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
BD9/20210501	1 - 1.1 m	Silty CLAY	01/05/2021	**<5**	<1	**5**	**13**	**28**	<0.1	**<2**	-	<5	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
310	0.2 - 0.3 m	FILL	01/05/2021	**5**	<0.4	**15**	**8**	**72**	<0.1	**4**	-	**43**	<25	**140**	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
310	0.8 - 0.9 m	Silty CLAY	01/05/2021	**5**	<0.4	**18**	**6**	**14**	<0.1	**2**	-	**10**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
311	0.4 - 0.5 m	FILL	01/05/2021	**7**	<0.4	**15**	**9**	**14**	<0.1	**3**	-	**23**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
312	0.7 - 0.8 m	FILL	01/05/2021	<4	<0.4	**6**	**22**	**20**	<0.1	**5**	-	**20**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
312	1.3 - 1.4 m	FILL	01/05/2021	**7**	<0.4	**17**	**22**	**20**	<0.1	**1**	-	**8**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1

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Table F2: Summary of Laboratory Results – Waste Classification Criteria

				Metals									TRH		BTEX									
				Arsenic	Cadmium	Total Chromium	Copper	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
			PQL	4	0.4	1	1	1	0.1	1		1	25	50	0.2	0.5	1	2	1	3	0.05	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/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
313	0.1 - 0.2 m	FILL	01/05/2021	**5**	<0.4	**12**	**12**	**16**	<0.1	**4**	-	**23**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
BD4/20210501	0.1-0.2	FILL	01/05/2021	<5	<1	**10**	**11**	**16**	<0.1	**5**	-	**23**	<10	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
313-A9	0.3 - 0.4 m	Material	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
313	0.9 - 1 m	FILL	01/05/2021	**5**	<0.4	**18**	**8**	**18**	<0.1	**6**	-	**19**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
314	0.4 - 0.5 m	FILL	01/05/2021	**5**	<0.4	**13**	**22**	**12**	<0.1	**12**	-	**36**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
314-A1	0.9 - 1.0 m	Material	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
314	1.3 - 1.4 m	FILL	01/05/2021	**5**	**0.5**	**27**	**45**	**49**	<0.1	**21**	-	**92**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
314	1.9 - 2 m	Silty Gravelly CLAY	01/05/2021	**8**	<0.4	**10**	**32**	**19**	<0.1	**6**	-	**39**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
315	0 - 0.1 m	FILL	01/05/2021	**4**	<0.4	**12**	**15**	**26**	<0.1	**7**	-	**60**	<25	**100**	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
315-A4	0.6 - 0.7 m	Material	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
315	0.6 - 0.7 m	FILL	01/05/2021	**5**	<0.4	**15**	**24**	**31**	<0.1	**9**	-	**59**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
316	0.4 - 0.5 m	FILL	01/05/2021	<4	<0.4	**8**	**9**	**11**	<0.1	**7**	-	**27**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
317	0 - 0.1 m	FILL	01/05/2021	**16**	<0.4	**15**	**24**	**48**	<0.1	**10**	-	**74**	<25	**260**	<0.2	<0.5	<1	<2	<1	<3	**0.05**	<0.1	<0.1	<0.1	<0.1
318	0 - 0.1 m	FILL	01/05/2021	**4**	<0.4	**9**	**20**	**36**	<0.1	**5**	-	**54**	<25	**120**	<0.2	<0.5	<1	<2	<1	<3	**0.07**	<0.1	<0.1	<0.1	<0.1
319	0.2 - 0.3 m	FILL	01/05/2021	**5**	<0.4	**12**	**15**	**26**	<0.1	**5**	-	**27**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
319	0.4 - 0.5 m	FILL	01/05/2021	**9**	<0.4	**26**	**15**	**23**	<0.1	**5**	-	**32**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
BD7/20210501	0.4 - 0.5 m	FILL	01/05/2021	**8**	<0.4	**21**	**12**	**20**	<0.1	**3**	-	**14**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
319	1.3 - 1.4 m	FILL	01/05/2021	<4	<0.4	**8**	**23**	**13**	<0.1	**2**	-	**12**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
319	1.9 - 2 m	FILL	01/05/2021	**6**	<0.4	**15**	**17**	**62**	**0.4**	**3**	-	**30**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
319	2.4 - 2.5 m	Silty CLAY	01/05/2021	**11**	<0.4	**14**	**14**	**35**	<0.1	**4**	-	**38**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
BD8/20210501	2.4 - 2.5 m	Silty CLAY	01/05/2021	**7**	<0.4	**18**	**24**	**83**	<0.1	**5**	-	**160**	<25	**120**	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
320	0.4 - 0.5 m	FILL	01/05/2021	**9**	<0.4	**24**	**22**	**35**	<0.1	**110**	-	**48**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
320-A7	0.9 - 1 m	Material	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
320	0.9 - 1 m	FILL	01/05/2021	**7**	<0.4	**14**	**17**	**21**	<0.1	**11**	-	**24**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
321	0.4 - 0.5 m	FILL	01/05/2021	**9**	<0.4	**14**	**21**	**23**	<0.1	**8**	-	**42**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
322	0 - 0.1 m	FILL	01/05/2021	<4	<0.4	**25**	**25**	**48**	<0.1	**28**	-	**93**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
323	0.9 - 1 m	FILL	01/05/2021	<4	<0.4	**17**	**26**	**13**	<0.1	**16**	-	**28**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
323	1.9 - 2 m	FILL	01/05/2021	**6**	<0.4	**14**	**18**	**62**	<0.1	**6**	-	**33**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
323	2.4 - 2.5 m	FILL	01/05/2021	**6**	<0.4	**10**	**28**	**23**	<0.1	**8**	-	**48**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
324	0.9 - 1 m	FILL	01/05/2021	**8**	<0.4	**15**	**13**	**22**	<0.1	**2**	-	**8**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
324	1.1 - 1.2 m	FILL	01/05/2021	**8**	<0.4	**12**	**18**	**29**	<0.1	**5**	-	**33**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	**0.07**	<0.1	<0.1	<0.1	**0.1**
235	0.4 - 0.5 m	FILL	01/05/2021	**5**	<0.4	**14**	**20**	**38**	<0.1	**7**	-	**45**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
326	0 - 0.1 m	FILL	01/05/2021	<4	<0.4	**7**	**15**	**18**	<0.1	**7**	-	**45**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1
326	0.3 - 0.4 m	SILTSTONE	01/05/2021	<4	<0.4	**4**	**16**	**14**	**0.1**	**3**	-	**22**	<25	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.1	<0.1	<0.1	<0.1

CT1 exceedance TCLP1 and/or SCC1 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
*	Chrysotile asbestos >7mm detected (0.0817g) detected in sample 315/0.6-0.7
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
Asbestos	Soil waste containing asbestos is classified as Special Waste Asbestos in conjunction with the chemical classification as above
ANZECC (1992)	ANZECC/NHMRC (1992) *Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites* , Environmental Soil Quality Guidelines Background A [ANZECC A];
ANZECC (2000)	ANZECC (2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* , Volume 3, Table 9.2.16 Datasets used to derive suggested upper background values for uncontaminated Australian soils
95% UCL	95% upper confidence limit of the mean concentration calculated using ProUCL v5.1 and the 95% Student's-t UCL method

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Table F2: Summary of Laboratory Results – Waste Classification Criteria

				PAH											Phenol	OCP		OPP	PCB	Asbestos					
				Benzo(b,j+k)fluoranthene	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 (40g)	Asbestos ID in soil (500ml sample) <0.1g/kg	ACM >7mm Estimation	FA and AF Estimation	FA and AF Estimation	Asbestos ID in materials
			PQL	0.2	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					<0.001	
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	mg/kg	-	-	-	g	%(w/w)	-
Waste Classification Criteria [f]																									
CT1				NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	200	288	60	<50	4	<50	NC	NC	NC	NC	NC	NC
SCC1				NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	200	518	108	<50	7.5	<50	NC	NC	NC	NC	NC	NC
TCLP1				NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	N/A	N/A	N/A	N/A	N/A	N/A	NC	NC	NC	NC	NC	NC
Published Background Levels																									
ANZECC (1992)														0.95-5	0.03 – 0.5	<0.001 - <0.97			0.02 – 0.1						
ANZECC (2000)																									
Laboratory Results - Previus Investigation DP 2020a																									
BH101/0.1-0.2	0.1-0.2	FILL	20/01/2020	1	0.5	0.8	0.1	0.4	<0.1	0.4	<1	0.1	0.6	5.8	NT	NT	NT	NT	NT	NAD	NAD	NAD	NT	NT	NT
BH102/0.1-0.2	0.1-0.2	FILL	20/01/2020	<0.2	<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	NT	NT	NT
BH103/0.1-0.2	0.1-0.2	FILL	20/01/2020	0.4	0.1	0.3	<0.1	0.3	<0.1	0.1	<1	<0.1	0.3	2	NT	NT	NT	NT	NT	NAD	NAD	NAD	NT	NT	NT
BD2/20200120	-	-	20/01/2020	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	0.07	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH104/0.1-0.2	0.1-0.2	FILL	20/01/2020	<0.2	<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	NT	NT	NT
BH105/0.1-0.2	0.1-0.2	FILL	20/01/2020	0.4	0.2	0.3	<0.1	0.2	<0.1	0.2	<1	<0.1	0.2	1.9	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD	NT	NT	NT
BH107/0.1-0.2	0.1-0.2	FILL	20/01/2020	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	0.06	NT	NT	NT	NT	NT	NAD	NAD	NAD	NT	NT	NT
BH108/0.1-0.2	0.1-0.2	FILL	20/01/2020	0.3	0.1	0.3	<0.1	0.2	<0.1	0.1	<1	0.1	0.3	1.8	NT	NT	NT	NT	NT	NAD	NAD	NAD	NT	NT	NT
BH109/0.1-0.2	0.1-0.2	FILL	20/01/2020	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	0.06	NT	NT	NT	NT	NT	NAD	NAD	NAD	NT	NT	NT
BH110/0.1-0.2	0.1-0.2	FILL	20/01/2020	<0.2	<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	NT	NT	NT
BH110/0.9-1.0	0.9-1.0	FILL	20/01/2020	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	0.09	NT	NT	NT	NT	NT	NAD	NAD	NAD	NT	NT	NT
BH102/1.0-1.45	1.0-1.45	Silty CLAY	20/01/2020	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH104/0.9-1.0	0.9-1.0	Silty CLAY	20/01/2020	<0.2	<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	NT	NT	NT
BH106/0.25-0.3	0.25-0.3	Silty CLAY	20/01/2020	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH109/0.4-0.5	0.4-0.5	Silty CLAY	20/01/2020	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH109/0.9-1.0	0.9-1.0	Silty CLAY	20/01/2020	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Laboratory Results - Previus Investigation DP 2020b																									
BH201/0.9-1.0	0.9-1.0	FILL	21/01/2020	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	NAD	NAD	NT	NT	NT
BH201/2.3-2.4	2.3-2.4	FILL	21/01/2020	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NT	NT	NT	NT	NT	NT
BH202/0.1-0.2	0.1-0.2	FILL	21/01/2020	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	NAD	NAD	NT	NT	NT
BH203/0.4-0.5	0.4-0.5	FILL	21/01/2020	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	NAD	NAD	NT	NT	NT
BH203/0.9-1.0	0.9-1.0	FILL	21/01/2020	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NT	NT	NT	NT	NT	NT
BH207/0.4-0.5	0.4-0.5	FILL	21/01/2020	<0.2	<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	NT	NT	NT
BD3/20200121	0.4-0.5	FILL	21/01/2020	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BH208/0.4-0.5	0.4-0.5	FILL	21/01/2020	**2.1**	**0.7**	**1.8**	**0.2**	**3.9**	**0.3**	**0.7**	<1	**3.5**	**3.6**	**21**	<5	<0.1	<0.1	<0.1	<0.1	NAD	NAD	NAD	NT	NT	NT
Laboratory Results - Current Investigation																									
301	0.1 - 0.2 m	FILL	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	**0.07**	<5	<0.1	<0.1	<0.1	<0.1	NAD	-	-	-	-	-
302	0.4 - 0.5 m	FILL	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	-	-	-	-	-
302	0.7 - 0.8 m	Silty CLAY	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-
303	0.1 - 0.2 m	FILL	01/05/2021	**0.3**	**0.1**	**0.2**	<0.1	**0.3**	<0.1	<0.1	<1	**0.1**	**0.3**	**1.6**	-	-	-	-	-	NAD	-	-	-	-	-
304	0.1 - 0.2 m	FILL	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	**0.05**	-	-	-	-	-	NAD	-	-	-	-	-
305	0.1 - 0.2 m	FILL	01/05/2021	**0.6**	**0.2**	**0.4**	<0.1	**0.4**	<0.1	**0.2**	<1	<0.1	**0.5**	**3.2**	-	-	-	-	-	NAD	-	-	-	-	-
306	0.1 - 0.2 m	FILL	01/05/2021	**0.2**	**0.1**	**0.1**	<0.1	**0.2**	<0.1	<0.1	<1	<0.1	**0.2**	**1**	-	-	-	-	-	NAD	-	-	-	-	-
307	0.1 - 0.2 m	FILL	01/05/2021	**0.2**	<0.1	**0.1**	<0.1	**0.2**	<0.1	<0.1	<1	<0.1	**0.2**	**1**	-	-	-	-	-	NAD	-	-	-	-	-
308	0.1 - 0.2 m	FILL	01/05/2021	<0.2	<0.1	**0.1**	<0.1	**0.1**	<0.1	<0.1	<1	<0.1	**0.2**	**0.5**	-	-	-	-	-	NAD	-	-	-	-	-
309	0.2 - 0.3 m	FILL	01/05/2021	**0.4**	**0.2**	**0.3**	<0.1	**0.3**	<0.1	**0.1**	<1	**0.1**	**0.3**	**2.3**	<5	<0.1	<0.1	<0.1	<0.1	NAD	-	-	-	-	-
309	1 - 1.1 m	Silty CLAY	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-
BD9/20210501	1 - 1.1 m	Silty CLAY	01/05/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-
310	0.2 - 0.3 m	FILL	01/05/2021	<0.2	<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	-	-	-	-	-
310	0.8 - 0.9 m	Silty CLAY	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-
311	0.4 - 0.5 m	FILL	01/05/2021	<0.2	<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	-	-	-	-	-
312	0.7 - 0.8 m	FILL	01/05/2021	<0.2	<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	-	-	-	-	-
312	1.3 - 1.4 m	FILL	01/05/2021	<0.2	<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	-	-	-	-	-

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Table F2: Summary of Laboratory Results – Waste Classification Criteria

				PAH											Phenol	OCP		OPP	PCB	Asbestos					
				Benzo(b,j+k)fluoranthene	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 (40g)	Asbestos ID in soil (500ml sample) <0.1g/kg	ACM >7mm Estimation	FA and AF Estimation	FA and AF Estimation	Asbestos ID in materials
			PQL	0.2	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					<0.001	
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	mg/kg	-	-	-	g	%(w/w)	-
313	0.1 - 0.2 m	FILL	01/05/2021	<0.2	<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	<0.001	-
BD4/20210501	0.1-0.2	FILL	01/05/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-
313-A9	0.3 - 0.4 m	Material	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Chysotile
313	0.9 - 1 m	FILL	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	-	-	-	-	-
314	0.4 - 0.5 m	FILL	01/05/2021	<0.2	<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	-	-	-	-	-
314-A1	0.9 - 1.0 m	Material	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Chysotile
314	1.3 - 1.4 m	FILL	01/05/2021	<0.2	<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	<0.001	-
314	1.9 - 2 m	Silty Gravelly CLAY	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-
315	0 - 0.1 m	FILL	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	-	-	-	-	-
315-A4	0.6 - 0.7 m	Material	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Chysotile
315	0.6 - 0.7 m	FILL	01/05/2021	<0.2	<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	-	AD*	AD*	NAD	<0.001	-
316	0.4 - 0.5 m	FILL	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	-	-	-	-	-
317	0 - 0.1 m	FILL	01/05/2021	<0.2	<0.1	<0.1	<0.1	**0.1**	<0.1	<0.1	<1	<0.1	**0.1**	**0.2**	-	-	-	-	-	NAD	-	-	-	-	-
318	0 - 0.1 m	FILL	01/05/2021	<0.2	<0.1	<0.1	<0.1	**0.1**	<0.1	<0.1	<1	<0.1	**0.1**	**0.3**	-	-	-	-	-	NAD	-	-	-	-	-
319	0.2 - 0.3 m	FILL	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	-	-	-	-	-
319	0.4 - 0.5 m	FILL	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	-	-	-	-	-
BD7/20210501	0.4 - 0.5 m	FILL	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-
319	1.3 - 1.4 m	FILL	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-
319	1.9 - 2 m	FILL	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	-	-	-	-	-
319	2.4 - 2.5 m	Silty CLAY	01/05/2021	<0.2	<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	-	-	-	-	-
BD8/20210501	2.4 - 2.5 m	Silty CLAY	01/05/2021	<0.2	<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	-	-	-	-	-	-
320	0.4 - 0.5 m	FILL	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	-	-	-	-	-
320-A7	0.9 - 1 m	Material	01/05/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Chysotile
320	0.9 - 1 m	FILL	01/05/2021	<0.2	<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	<0.001	-
321	0.4 - 0.5 m	FILL	01/05/2021	<0.2	<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	-	-	-	-	-
322	0 - 0.1 m	FILL	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	-	-	-	-	-
323	0.9 - 1 m	FILL	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	-	-	-	-	-
323	1.9 - 2 m	FILL	01/05/2021	<0.2	<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	-	-	-	-	-
323	2.4 - 2.5 m	FILL	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	-	-	-	-	-
324	0.9 - 1 m	FILL	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	-	-	-	-	-
324	1.1 - 1.2 m	FILL	01/05/2021	<0.2	<0.1	**0.2**	<0.1	**0.2**	<0.1	<0.1	<1	<0.1	**0.2**	**0.82**	<5	<0.1	<0.1	<0.1	<0.1	NAD	-	-	-	-	-
235	0.4 - 0.5 m	FILL	01/05/2021	<0.2	<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	-	-	-	-	-
326	0 - 0.1 m	FILL	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	NAD	-	-	-	-	-
326	0.3 - 0.4 m	SILTSTONE	01/05/2021	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.05	-	-	-	-	-	-	-	-	-	-	-

CT1 exceedance TCLP1 and/or SCC1 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
*	Chrysotile asbestos >7mm detected (0.0817g) detected in sample 315/0.6-0.7
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
Asbestos	Soil waste containing asbestos is classified as Special Waste Asbestos in conjunction with the chemical classification as above
ANZECC (1992)	ANZECC/NHMRC (1992) *Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites* , Environmental Soil Quality Guidelines Background A [ANZECC A];
ANZECC (2000)	ANZECC (2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* , Volume 3, Table 9.2.16 Datasets used to derive suggested upper background values for uncontaminated Australian soils
95% UCL	95% upper confidence limit of the mean concentration calculated using ProUCL v5.1 and the 95% Student's-t UCL method

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.17/05/2021 4:51:56 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Nickel

General Statistics

Total Number of Observations	65	Number of Distinct Observations	19
Number of Detects	64	Number of Non-Detects	1
Number of Distinct Detects	19	Number of Distinct Non-Detects	1
Minimum Detect	1	Minimum Non-Detect	1
Maximum Detect	110	Maximum Non-Detect	1
Variance Detects	194.4	Percent Non-Detects	1.538%
Mean Detects	8.234	SD Detects	13.94
Median Detects	6	CV Detects	1.693
Skewness Detects	6.441	Kurtosis Detects	46.53
Mean of Logged Detects	1.696	SD of Logged Detects	0.789

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.388	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.322	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.111	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	8.123	KM Standard Error of Mean	1.72
KM SD	13.76	95% KM (BCA) UCL	11.62
95% KM (t) UCL	10.99	95% KM (Percentile Bootstrap) UCL	11.15
95% KM (z) UCL	10.95	95% KM Bootstrap t UCL	15.79
90% KM Chebyshev UCL	13.28	95% KM Chebyshev UCL	15.62
97.5% KM Chebyshev UCL	18.86	99% KM Chebyshev UCL	25.23

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	3.066	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.772	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.196	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.114	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.356	k star (bias corrected MLE)	1.303
Theta hat (MLE)	6.071	Theta star (bias corrected MLE)	6.318
nu hat (MLE)	173.6	nu star (bias corrected)	166.8
Mean (detects)	8.234		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

55	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
56	This is especially true when the sample size is small.											
57	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
58					Minimum	0.01				Mean	8.108	
59					Maximum	110				Median	6	
60					SD	13.87				CV	1.711	
61					k hat (MLE)	1.152				k star (bias corrected MLE)	1.109	
62					Theta hat (MLE)	7.041				Theta star (bias corrected MLE)	7.313	
63					nu hat (MLE)	149.7				nu star (bias corrected)	144.1	
64					Adjusted Level of Significance (β)	0.0463						
65					Approximate Chi Square Value (144.13, α)	117.4				Adjusted Chi Square Value (144.13, β)	116.8	
66					95% Gamma Approximate UCL (use when n>=50)	9.955				95% Gamma Adjusted UCL (use when n<50)	10	
67												
68	**Estimates of Gamma Parameters using KM Estimates**											
69					Mean (KM)	8.123				SD (KM)	13.76	
70					Variance (KM)	189.2				SE of Mean (KM)	1.72	
71					k hat (KM)	0.349				k star (KM)	0.343	
72					nu hat (KM)	45.33				nu star (KM)	44.57	
73					theta hat (KM)	23.3				theta star (KM)	23.69	
74					80% gamma percentile (KM)	12.82				90% gamma percentile (KM)	23.53	
75					95% gamma percentile (KM)	35.57				99% gamma percentile (KM)	66.36	
76												
77	**Gamma Kaplan-Meier (KM) Statistics**											
78					Approximate Chi Square Value (44.57, α)	30.26				Adjusted Chi Square Value (44.57, β)	29.99	
79					95% Gamma Approximate KM-UCL (use when n>=50)	11.97				95% Gamma Adjusted KM-UCL (use when n<50)	12.07	
80												
81	**Lognormal GOF Test on Detected Observations Only**											
82					Shapiro Wilk Approximate Test Statistic	0.951				**Shapiro Wilk GOF Test**		
83					5% Shapiro Wilk P Value	0.0276				Detected Data Not Lognormal at 5% Significance Level		
84					Lilliefors Test Statistic	0.111				**Lilliefors GOF Test**		
85					5% Lilliefors Critical Value	0.111				Detected Data Not Lognormal at 5% Significance Level		
86	**Detected Data Not Lognormal at 5% Significance Level**											
87												
88	**Lognormal ROS Statistics Using Imputed Non-Detects**											
89					Mean in Original Scale	8.119				Mean in Log Scale	1.665	
90					SD in Original Scale	13.87				SD in Log Scale	0.823	
91					95% t UCL (assumes normality of ROS data)	10.99				95% Percentile Bootstrap UCL	11.18	
92					95% BCA Bootstrap UCL	13.05				95% Bootstrap t UCL	15.7	
93					95% H-UCL (Log ROS)	9.219						
94												
95	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
96					KM Mean (logged)	1.67				KM Geo Mean	5.314	
97					KM SD (logged)	0.805				95% Critical H Value (KM-Log)	2.099	
98					KM Standard Error of Mean (logged)	0.101				95% H-UCL (KM -Log)	9.073	
99					KM SD (logged)	0.805				95% Critical H Value (KM-Log)	2.099	
100					KM Standard Error of Mean (logged)	0.101						
101												
102	**DL/2 Statistics**											
103	**DL/2 Normal**									**DL/2 Log-Transformed**		
104					Mean in Original Scale	8.115				Mean in Log Scale	1.66	
105					SD in Original Scale	13.87				SD in Log Scale	0.837	
106					95% t UCL (Assumes normality)	10.99				95% H-Stat UCL	9.329	
107	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
108												

	A	B	C	D	E	F	G	H	I	J	K	L
109	**Nonparametric Distribution Free UCL Statistics**											
110	**Data do not follow a Discernible Distribution at 5% Significance Level**											
111												
112	**Suggested UCL to Use**											
113	95% KM (Chebyshev) UCL					15.62						
114												
115	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
116	Recommendations are based upon data size, data distribution, and skewness.											
117	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
118	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
119												
120	**B(a)P**											
121												
122	**General Statistics**											
123	Total Number of Observations					65	Number of Distinct Observations					10
124	Number of Detects					21	Number of Non-Detects					44
125	Number of Distinct Detects					10	Number of Distinct Non-Detects					1
126	Minimum Detect					0.05	Minimum Non-Detect					0.05
127	Maximum Detect					1.4	Maximum Non-Detect					0.05
128	Variance Detects					0.103	Percent Non-Detects					67.69%
129	Mean Detects					0.221	SD Detects					0.321
130	Median Detects					0.09	CV Detects					1.451
131	Skewness Detects					3.009	Kurtosis Detects					9.607
132	Mean of Logged Detects					-2.044	SD of Logged Detects					0.928
133												
134	**Normal GOF Test on Detects Only**											
135	Shapiro Wilk Test Statistic					0.56	**Shapiro Wilk GOF Test**					
136	5% Shapiro Wilk Critical Value					0.908	Detected Data Not Normal at 5% Significance Level					
137	Lilliefors Test Statistic					0.336	**Lilliefors GOF Test**					
138	5% Lilliefors Critical Value					0.188	Detected Data Not Normal at 5% Significance Level					
139	**Detected Data Not Normal at 5% Significance Level**											
140												
141	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
142	KM Mean					0.105	KM Standard Error of Mean					0.0248
143	KM SD					0.195	95% KM (BCA) UCL					0.158
144	95% KM (t) UCL					0.147	95% KM (Percentile Bootstrap) UCL					0.148
145	95% KM (z) UCL					0.146	95% KM Bootstrap t UCL					0.217
146	90% KM Chebyshev UCL					0.18	95% KM Chebyshev UCL					0.213
147	97.5% KM Chebyshev UCL					0.26	99% KM Chebyshev UCL					0.352
148												
149	**Gamma GOF Tests on Detected Observations Only**											
150	A-D Test Statistic					1.836	**Anderson-Darling GOF Test**					
151	5% A-D Critical Value					0.768	Detected Data Not Gamma Distributed at 5% Significance Level					
152	K-S Test Statistic					0.269	**Kolmogorov-Smirnov GOF**					
153	5% K-S Critical Value					0.195	Detected Data Not Gamma Distributed at 5% Significance Level					
154	**Detected Data Not Gamma Distributed at 5% Significance Level**											
155												
156	**Gamma Statistics on Detected Data Only**											
157	k hat (MLE)					1.071	k star (bias corrected MLE)					0.95
158	Theta hat (MLE)					0.206	Theta star (bias corrected MLE)					0.233
159	nu hat (MLE)					44.98	nu star (bias corrected)					39.89
160	Mean (detects)					0.221						
161												
162	**Gamma ROS Statistics using Imputed Non-Detects**											

163	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
164	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
165	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
166	This is especially true when the sample size is small.											
167	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
168					Minimum	0.01				Mean	0.0782	
169					Maximum	1.4				Median	0.01	
170					SD	0.205				CV	2.623	
171					k hat (MLE)	0.515				k star (bias corrected MLE)	0.501	
172					Theta hat (MLE)	0.152				Theta star (bias corrected MLE)	0.156	
173					nu hat (MLE)	66.9				nu star (bias corrected)	65.15	
174					Adjusted Level of Significance (β)	0.0463						
175					Approximate Chi Square Value (65.15, α)	47.57				Adjusted Chi Square Value (65.15, β)	47.23	
176					95% Gamma Approximate UCL (use when n>=50)	0.107				95% Gamma Adjusted UCL (use when n<50)	0.108	
177												
178	**Estimates of Gamma Parameters using KM Estimates**											
179					Mean (KM)	0.105				SD (KM)	0.195	
180					Variance (KM)	0.038				SE of Mean (KM)	0.0248	
181					k hat (KM)	0.291				k star (KM)	0.288	
182					nu hat (KM)	37.86				nu star (KM)	37.44	
183					theta hat (KM)	0.361				theta star (KM)	0.365	
184					80% gamma percentile (KM)	0.16				90% gamma percentile (KM)	0.312	
185					95% gamma percentile (KM)	0.488				99% gamma percentile (KM)	0.947	
186												
187	**Gamma Kaplan-Meier (KM) Statistics**											
188					Approximate Chi Square Value (37.44, α)	24.43				Adjusted Chi Square Value (37.44, β)	24.19	
189					95% Gamma Approximate KM-UCL (use when n>=50)	0.161				95% Gamma Adjusted KM-UCL (use when n<50)	0.163	
190												
191	**Lognormal GOF Test on Detected Observations Only**											
192					Shapiro Wilk Test Statistic	0.855				**Shapiro Wilk GOF Test**		
193					5% Shapiro Wilk Critical Value	0.908				Detected Data Not Lognormal at 5% Significance Level		
194					Lilliefors Test Statistic	0.229				**Lilliefors GOF Test**		
195					5% Lilliefors Critical Value	0.188				Detected Data Not Lognormal at 5% Significance Level		
196	**Detected Data Not Lognormal at 5% Significance Level**											
197												
198	**Lognormal ROS Statistics Using Imputed Non-Detects**											
199					Mean in Original Scale	0.0783				Mean in Log Scale	-4.163	
200					SD in Original Scale	0.205				SD in Log Scale	1.879	
201					95% t UCL (assumes normality of ROS data)	0.121				95% Percentile Bootstrap UCL	0.125	
202					95% BCA Bootstrap UCL	0.15				95% Bootstrap t UCL	0.184	
203					95% H-UCL (Log ROS)	0.179						
204												
205	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
206					KM Mean (logged)	-2.688				KM Geo Mean	0.068	
207					KM SD (logged)	0.68				95% Critical H Value (KM-Log)	1.996	
208					KM Standard Error of Mean (logged)	0.0865				95% H-UCL (KM -Log)	0.102	
209					KM SD (logged)	0.68				95% Critical H Value (KM-Log)	1.996	
210					KM Standard Error of Mean (logged)	0.0865						
211												
212	**DL/2 Statistics**											
213	**DL/2 Normal**									**DL/2 Log-Transformed**		
214					Mean in Original Scale	0.0883				Mean in Log Scale	-3.158	
215					SD in Original Scale	0.202				SD in Log Scale	0.933	
216					95% t UCL (Assumes normality)	0.13				95% H-Stat UCL	0.085	

	A	B	C	D	E	F	G	H	I	J	K	L
217	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
218												
219	**Nonparametric Distribution Free UCL Statistics**											
220	**Data do not follow a Discernible Distribution at 5% Significance Level**											
221												
222	**Suggested UCL to Use**											
223	95% KM (Chebyshev) UCL					0.213						
224												
225	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
226	Recommendations are based upon data size, data distribution, and skewness.											
227	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
228	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
229												

Appendix G

Borehole and Test Pit Logs

BOREHOLE LOG

CLIENT: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 87.9 AHD
EASTING: 318197.0
NORTHING: 6260381.1
DIP/AZIMUTH: 90°/--

BORE No: 301
PROJECT No: 86976.01
DATE: 1/5/2021
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
		FILL/TOPSOIL/Silty Sandy CLAY: low to medium plasticity, brown, fine to medium sand, trace gravel and rootlets, w<PL			0.1				
				E	0.2				
	0.4	Silty CLAY: medium to high plasticity, red brown trace ironstone gravel, w~PL, residual			0.4				
				E	0.5				
87	0.9	Bore discontinued at 0.9m Target depth reached							
	1								1
86	2								2
85	3								3
84	4								4
83									

RIG: Hand Tools **DRILLER:** HD **LOGGED:** HD **CASING:** Uncased

TYPE OF BORING: Hand auger to 0.9m

WATER OBSERVATIONS: No free ground water observed during augering.

REMARKS: Location coordinates are in MGA94 Zone 56. Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data

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

BOREHOLE LOG

CLIENT: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 89.2 AHD
EASTING: 318238.8
NORTHING: 6260381.2
DIP/AZIMUTH: 90°/--

BORE No: 302
PROJECT No: 86976.01
DATE: 1/5/2021
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
89	0.1	FILL/TOPSOIL/Silty CLAY: low to medium plasticity, dark brown, with sand, trace rootlets, w<PL		E	0.1				
	0.2				0.2				
	0.4	FILL/Silty CLAY; medium to high plasticity, brown, trace gravel, w~PL		E	0.4				
	0.5				0.5				
	0.6	Silty CLAY CI-CH: medium to high plasticity, red brown trace ironstone gravel, w~PL							
	0.7			E	0.7				
	0.8				0.8				
	1								1
	1.1	Bore discontinued at 1.1m Target depth reached							
88	2								2
87	3								3
86	4								4
85									

RIG: Hand Tools **DRILLER:** HD **LOGGED:** HD **CASING:** Uncased

TYPE OF BORING: Hand auger to 1.1m

WATER OBSERVATIONS: No free ground water observed during augering.

REMARKS: Location coordinates are in MGA94 Zone 56. Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data

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

BOREHOLE LOG

CLIENT: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 87.1 AHD
EASTING: 318185.3
NORTHING: 6260369.2
DIP/AZIMUTH: 90°/--

BORE No: 303
PROJECT No: 86976.01
DATE: 1/5/2021
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
87	0.3	FILL/TOPSOIL/Silty SAND: fine to medium, brown, trace gravel and rootlets, moist		E	0.1 0.2				
	0.8	Silty CLAY CI-Ch: medium to high plasticity, orange-brown mottled yellow-brown, w~PL		E	0.4 0.5				
86	1	Bore discontinued at 0.8m Target depth reached							
85	2								
84	3								
83	4								

RIG: Hand Tools **DRILLER:** HD **LOGGED:** HD **CASING:** Uncased

TYPE OF BORING: Hand auger to 0.8m

WATER OBSERVATIONS: No free ground water observed during augering.

REMARKS: Location coordinates are in MGA94 Zone 56. Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data

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

BOREHOLE LOG

CLIENT: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 88.9 AHD
EASTING: 318227.4
NORTHING: 6260369.2
DIP/AZIMUTH: 90°/--

BORE No: 304
PROJECT No: 86976.01
DATE: 1/5/2021
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
88	0.2	FILL/Silty SAND: fine to medium, brown with igneous and silstone gravel, with rootlets, trace clay and fragments of tile, moist		E	0.1 0.2				
		Bore discontinued at 0.2m Refusal on obstruction (gravel) in fill							
87	1								1
86	2								2
85	3								3
84	4								4

RIG: Hand Tools **DRILLER:** HD **LOGGED:** HD **CASING:** Uncased

TYPE OF BORING: Hand auger to 0.2m

WATER OBSERVATIONS: No free ground water observed during augering.

REMARKS: Location coordinates are in MGA94 Zone 56. Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data

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

BOREHOLE LOG

CLIENT: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 87.9 AHD
EASTING: 318208.2
NORTHING: 6260360.2
DIP/AZIMUTH: 90°/--

BORE No: 305
PROJECT No: 86976.01
DATE: 1/5/2021
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
		FILL/TOPSOIL/Silty SAND: fine to medium, brown, trace gravel and rootlets, moist		E	0.1 0.2				
	0.3	Silty CLAY CI-CH: medium to high plasticity, red-brown mottled grey, w~PL, residual		E	0.6 0.7				
	0.8	Bore discontinued at 0.8m Target depth reached							
87	1								1
86	2								2
85	3								3
84	4								4
83									

RIG: Hand Tools **DRILLER:** HD **LOGGED:** HD **CASING:** Uncased

TYPE OF BORING: Hand auger to 0.8m

WATER OBSERVATIONS: No free ground water observed during augering.

REMARKS: Location coordinates are in MGA94 Zone 56. Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data

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: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 89.8 AHD
EASTING: 318247.4
NORTHING: 6260360.4
DIP/AZIMUTH: 90°/--

BORE No: 306
PROJECT No: 86976.01
DATE: 1/5/2021
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
89	0.4	FILL/TOPSOIL/Silty SAND: fine to medium, brown, trace gravel, clay and rootlets, moist,		E	0.1 0.2				
	0.9	Silty CLAY CI-CH: medium to high plasticity, red-brown and orange-brown, trace charcoal, w~PL, residual		E	0.6 0.7				
88	1	Bore discontinued at 0.9m Target depth reached							
87	2								
86	3								
85	4								

RIG: Hand Tools **DRILLER:** HD **LOGGED:** HD **CASING:** Uncased

TYPE OF BORING: Hand auger to 0.9m

WATER OBSERVATIONS: No free ground water observed during augering.

REMARKS: Location coordinates are in MGA94 Zone 56. Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data

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: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 86.9 AHD
EASTING: 318197.1
NORTHING: 6260345.6
DIP/AZIMUTH: 90°/--

BORE No: 307
PROJECT No: 86976.01
DATE: 1/5/2021
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
86	0.4	FILL/TOPSOIL/Silty SAND: fine to medium, brown, with rootlets and ironstone gravel, moist		E	0.1 0.2				
	0.9	Silty CLAY CI-CH: medium to high plasticity, red-brown and orange-brown, trace charcoal, w~PL, residual		E	0.6 0.7				
	1	Bore discontinued at 0.9m Target depth reached							
85	2								
84	3								
83	4								
82									

RIG: Hand Tools **DRILLER:** HD **LOGGED:** HD **CASING:** Uncased

TYPE OF BORING: Hand auger to 0.9m

WATER OBSERVATIONS: No free ground water observed during augering.

REMARKS: Location coordinates are in MGA94 Zone 56. Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data

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: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 88.9 AHD
EASTING: 318228.4
NORTHING: 6260341.6
DIP/AZIMUTH: 90°/--

BORE No: 308
PROJECT No: 86976.01
DATE: 1/5/2021
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
88	0.4	FILL/TOPSOIL/Silty SAND: fine to medium, brown, with gravel and rootlets, moist		E	0.1 0.2				
		Silty CLAY CI-CH: medium to high plasticity, red-brown and orange-brown, with sand, trace charcoal, w~PL, residual		E	0.6 0.7				
	0.9	Bore discontinued at 0.9m Target depth reached							
87	1								1
86	2								2
85	3								3
84	4								4

RIG: Hand Tools **DRILLER:** HD **LOGGED:** HD **CASING:** Uncased

TYPE OF BORING: Hand auger to 0.9m

WATER OBSERVATIONS: No free ground water observed during augering.

REMARKS: Location coordinates are in MGA94 Zone 56. Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data

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: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 88.8 AHD
EASTING: 318233.7
NORTHING: 6260313.1
DIP/AZIMUTH: 90°/--

BORE No: 309
PROJECT No: 86976.01
DATE: 1/5/2021
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
88	0.0	FILL/TOPSOIL/Silty SAND: fine to medium, dark brown, trace gravel, clay and rootlets, moist		E	0.2 0.3				
	0.6	Silty CLAY CI-CH: medium to high plasticity, orange-brown mottled brown-grey, w~PL, residual From 0.7m: trace charcoal		E	0.7 0.8				
	1			E*	1.0				1
87	1.1	Bore discontinued at 1.1m Target depth reached			1.1				
	2								2
86	3								3
85	4								4
84									

RIG: Hand Tools **DRILLER:** HD **LOGGED:** HD **CASING:** Uncased

TYPE OF BORING: Hand auger to 1.1m

WATER OBSERVATIONS: No free ground water observed during augering.

REMARKS: Location coordinates are in MGA94 Zone 56. Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data, *Blind replicate sample BD9/20210501 taken from 1.0-1.1m

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: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 82.5 AHD
EASTING: 318164.4
NORTHING: 6260259.4
DIP/AZIMUTH: 90°/--

BORE No: 310
PROJECT No: 86976.01
DATE: 1/5/2021
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
82	0.2	FILL/TOPSOIL/Silty SAND: medium to coarse, dark brown, with gravel, trace rootlets, moist		E	0.2				
	0.3	FILL/Silty SAND: medium to coarse, brown with gravel and clay, moist		E	0.3 0.5				
	0.7	Silty CLAY CI-CH: medium to high plasticity, red-brown, with fine to coarse sand, w~PL, residual		E*	0.6 0.8				
	0.9	Bore discontinued at 0.9m Refusal on stiff clay			0.9				
81	1								1
80	2								2
79	3								3
78	4								4

RIG: Hand Tools **DRILLER:** HD **LOGGED:** HD **CASING:** Uncased

TYPE OF BORING: Hand auger to 0.9m

WATER OBSERVATIONS: No free ground water observed during augering.

REMARKS: Location coordinates are in MGA94 Zone 56. Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data, *Blind replicate sample BD6/20210501 taken from 0.8-0.9m

SAMPLING & IN SITU TESTING LEGEND

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

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 80.9 AHD
EASTING: 318168.5
NORTHING: 6260221.7
DIP/AZIMUTH: 90°/--

BORE No: 311
PROJECT No: 86976.01
DATE: 1/5/2021
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
80.9	0.0	FILL/TOPSOIL/Silty SAND: fine to medium, dark brown, with rootlets, moist		E	0.2				
	0.3	FILL/Sandy CLAY: medium plasticity, yellow-brown mottled orange-brown, trace sandstone gravel, w~PL		E	0.3 0.4				
	0.5	Sandy CLAY CI0CH: medium to high plasticity, red-brown and yellow-brown, fine to medium sand, w~PL		E	0.5 0.6				
80	0.8	Bore discontinued at 0.8m Refusal on stiff clay			0.7				
	1								
79	2								
78	3								
77	4								
76									

RIG: Hand Tools **DRILLER:** HD **LOGGED:** HD **CASING:** Uncased

TYPE OF BORING: Hand auger to 0.8m

WATER OBSERVATIONS: No free ground water observed during augering.

REMARKS: Location coordinates are in MGA94 Zone 56. Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data

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: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 81.2 AHD
EASTING: 318175.2
NORTHING: 6260189.6
DIP/AZIMUTH: 90°/--

BORE No: 312
PROJECT No: 86976.01
DATE: 1/5/2021
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
81	0	FILL/Sandy CLAY: low plasticity, brown, trace gravel and rootlets, w<PL		E	0.1				
					0.2				
				E	0.7				
					0.8				
	0.9	FILL/Sandy CLAY: medium plasticity, brown mottled orange-brown, fine to coarse, trace gravel, w~PL		E	1.0				
	1				1.1				1
80	1.2	FILL/Silty CLAY: low to medium plasticity, dark brown mottled grey-brown, w~PL		E	1.3				
					1.4				
	1.5	Silty CLAY CI-CH: medium to high plasticity, orange-brown mottled red-grey, w~PL		E	1.5				
	1.6			E*	1.6				
	1.7	Clayey SAND SC: fine to coarse, orange-brown mottled red-grey, moist			1.7				
		Bore discontinued at 1.7m Practical refusal on stiff clay							
	2								2
79									
	3								3
78									
	4								4
77									

RIG: Hand Tools **DRILLER:** HD **LOGGED:** HD **CASING:** Uncased

TYPE OF BORING: Hand auger to 1.7m

WATER OBSERVATIONS: No free ground water observed during augering.

REMARKS: Location coordinates are in MGA94 Zone 56. Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data, *Blind replicate sample BD5/20210501 taken from 1.6-1.7m

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: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 77.8 AHD
EASTING: 318161.9
NORTHING: 6260156.3
DIP/AZIMUTH: 90°/--

BORE No: 313
PROJECT No: 86976.01
DATE: 1/5/2021
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
77	0.1	FILL/TOPSOIL/Silty SAND: fine to coarse, brown, trace gravel, rootlets, moist		E*	0.1				
		FILL/Silty SAND: fine to coarse, brown, trace gravel, rootlets, moist			0.2				
					0.3	A9^	^Fragment of ACM		
					0.4				
	0.6	FILL/Sandy CLAY: medium plasticity, orange-brown mottled red-grey, fine to coarse, w~PL		E	0.6				
					0.7				
				E	0.9				
	1 1.0	Silty CLAY CI-CH: medium to high plasticity, red-brown mottled orange-brown and grey, w~PL, residual			1.0				1
				E	1.4				
	1.5	Bore discontinued at 1.5m Target depth reached			1.5				
76	2								2
75	3								3
74	4								4
73									

RIG: Hand Tools **DRILLER:** HD **LOGGED:** HD **CASING:** Uncased

TYPE OF BORING: Hand auger to 1.5m

WATER OBSERVATIONS: No free ground water observed during augering.

REMARKS: Location coordinates are in MGA94 Zone 56. Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data,*Blind replicate samp BD4/20210501 taken from 0.1-0.2m

SAMPLING & IN SITU TESTING LEGEND

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

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TEST PIT LOG

CLIENT: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 80.8 AHD
EASTING: 318184.7
NORTHING: 6260130.7

PIT No: 314
PROJECT No: 86976.01
DATE: 1/5/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
80	0.1	FILL/TOPSOIL/Silty Sandy CLAY: low plasticity, dark brown, fine to medium, with roots, w<PL		E	0.0				
		FILL/Gravelly CLAY: low to medium plasticity, brown, siltstone gravel, W~PL			0.1				
	0.5			E	0.4				
		FILL/Gravelly CLAY: low to medium plasticity, dark brown mottled orange-brown, fine to medium igneous, sandstone and siltstone gravel, with glass fragments, metal pipe and fragments, brick, ceramic, w~PL			0.5				
	1			E	0.9	A1, A2 and A3^	^Fragments of ACM		1
					1.0				
				E	1.3				
	1.4			E	1.4				
79		Silty Gravelly CLAY CL: low plasticity, grey and red-brown, siltstone gravel, w~PL, residual			1.5				
		From 1.6m: orange-brown and grey							
	2			E	1.9				2
	2.0	Pit discontinued at 2.0m			2.0				
		Target depth reached							
78	3								3
77	4								4
76									

RIG: 3.5 Tonne excavator (350mm Toothed Bucket)
LOGGED: LT
SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free ground water observed during test pitting.

REMARKS: Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data

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

SAMPLING & IN SITU TESTING LEGEND

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

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TEST PIT LOG

CLIENT: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 85.2 AHD
EASTING: 318230.7
NORTHING: 6260216.7

PIT No: 315
PROJECT No: 86976.01
DATE: 1/5/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
85	0.1	FILL/TOPSOIL/Sandy CLAY: low plasticity, brown with roots, w<PL		E	0.0–0.1				
		FILL/Sandy CLAY: low plasticity, brown, fine to medium sand with roots, w<PL		E	0.4–0.5	A4, A5, A6^	^Fragments of ACM		
	0.5	FILL/Silty CLAY: low to medium plasticity, dark brown, with gravel, porcelain, brick, fibre cement fragment (asbestos containing material), w~PL		E	0.6–0.7				
				E	0.9–1.0				
84	1.0	FILL/Silty CLAY: medium to high plasticity, dark brown, with roots, w~PL							
	1.1	Silty CLAY CI: medium plasticity, grey mottled red-brown, with fine to medium siltstone gravel, w<PL, residual							
	1.4	SILTSTONE: dark grey		E	1.4–1.5				
	1.5	Pit discontinued at 1.5m Target depth reached							
83	2								
82	3								
81	4								

RIG: 3.5 Tonne excavator (350mm Toothed Bucket)

LOGGED: LT

SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free ground water observed during test pitting.

REMARKS: Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data

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

SAMPLING & IN SITU TESTING LEGEND

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

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TEST PIT LOG

CLIENT: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 85.8 AHD
EASTING: 318262.1
NORTHING: 6260221.3

PIT No: 316
PROJECT No: 86976.01
DATE: 1/5/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
	0.0			E*	0.0				
	0.1	FILL/TOPSOIL/Gravelly Silty CLAY: low plasticity, dark brown, fine to medium igneous gravel, trace roots, w~PL			0.1				
	0.2	FILL/Silty CLAY: low plasticity, dark brown, igneous, trace roots and sand, w~PL							
		FILL/Silty SAND: fine to coarse, brown, trace gravel, moist		E	0.4				
	0.5	Silty CLAY CI-CH: medium to high plasticity, grey mottled orange-brown, trace rootlets, w~PL, residual		E	0.5				
	0.6				0.6				
	0.7	SILTSTONE: dark grey							
		Pit discontinued at 0.7m Target depth reached							

RIG: 3.5 Tonne excavator (350mm Toothed Bucket)

LOGGED: LT

SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free ground water observed during test pitting.

REMARKS: Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data,
*Blind replicate sample BD1/20210501 taken from 0-0.1m

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

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 89.3 AHD
EASTING: 318275.7
NORTHING: 6260229.6

PIT No: 317
PROJECT No: 86976.01
DATE: 1/5/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
89	0.0	FILL/TOPSOIL/Gravelly CLAY: low plasticity, dark brown, igneous gravel, trace roots and silt, w~PL		E	0.0				
	0.1				0.1				
	0.4	Silty CLAY CI-CH: medium to high plasticity, orange-brown, trace ironstone gravel, w~PL, residual		E*	0.4				
	0.5	From 0.7m: with siltstone and ironstone gravel			0.5				
	0.8			E	0.8				
	0.9	Pit discontinued at 0.9m Target depth reached			0.9				
88	1								1
87	2								2
86	3								3
85	4								4

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

RIG: 3.5 Tonne excavator (350mm Toothed Bucket)
LOGGED: LT
SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free ground water observed during test pitting.

REMARKS: Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data,
*Blind replicate sample BD2/20210501 taken from 0.4-0.5m

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

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 93.0 AHD
EASTING: 318325.8
NORTHING: 6260226.1
DIP/AZIMUTH: 90°/--

BORE No: 318
PROJECT No: 86976.01
DATE: 1/5/2021
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
93	0.0	FILL/TOPSOIL/Silty CLAY: low plasticity, dark brown, trace gravel and roots, w<PL		E	0.0 0.1				
	0.4	Silty CLAY CI-CH: medium to high plasticity, red-brown, trace ironstone gravel, w~PL, residual		E	0.4 0.5				
	0.8	Bore discontinued at 0.8m Target depth reached							
92	1								1
91	2								2
90	3								3
89	4								4

RIG: Hand Tools **DRILLER:** LT **LOGGED:** LT **CASING:** Uncased

TYPE OF BORING: Hand auger to 0.8m

WATER OBSERVATIONS: No free ground water observed during augering.

REMARKS: Location coordinates are in MGA94 Zone 56. Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 85.0 AHD
EASTING: 318213.9
NORTHING: 6260201.0

PIT No: 319
PROJECT No: 86976.01
DATE: 1/5/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
85	0.15	FILL/TOPSOIL/Silty SAND: fine to medium, dark brown, with roots, moist		E	0.0 – 0.1				
	0.3	FILL/Gravelly CLAY: low to medium plasticity, grey-brown, fine to medium siltstone gravel, trace silt, w~PL		E	0.2 – 0.3				
		FILL/Silty CLAY: medium plasticity, red-brown with gravel, trace fabric pieces, w~PL Between 0.3-0.4m: concrete boulder		E*	0.4 – 0.5				
				E	0.9				
84	1.0	FILL/Gravelly CLAY: low plasticity, grey, siltstone gravel, w~PL		E	1.0 – 1.3				1
				E	1.4				
	1.5	FILL/Gravelly CLAY: low to medium plasticity, dark brown mottled orange-brown, siltstone gravel, trace charcoal, metal, timber, fragments of fibre cement material (asbestos containing material)		E	1.5 – 1.9				
83	2.0	FILL/Silty CLAY: low to medium plasticity, dark grey and grey with timber, w~PL		E**	2.0 – 2.4 – 2.5				2
	2.7	FILL/Silty CLAY: low to medium plasticity, dark grey trace roots		E	2.7 – 2.8				
	2.9	Silty CLAY CI-CH: medium to high plasticity, grey mottled orange-brown, trace siltstone gravel, w~PL, residual		E	2.9 – 3.0				
82	3.0	Pit discontinued at 3.0m Target depth reached							3
81	4								4

RIG: 3.5 Tonne excavator (350mm Toothed Bucket)

LOGGED: LT

SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free ground water observed during test pitting.

REMARKS: Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data,
*Blind replicate sample BD7/20210501 and BD8/20210501 taken from 0.4-0.5m and 2.4-2.5m,respectively

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

SAMPLING & IN SITU TESTING LEGEND

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

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Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 85.3 AHD
EASTING: 318250.3
NORTHING: 626020.03

PIT No: 320
PROJECT No: 86976.01
DATE: 1/5/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
85	0.0	FILL/TOPSOIL/Silty Sandy CLAY: fine to medium, dark brown, with roots, w<PL		E	0.0				
	0.2	FILL/Silty CLAY: low to medium plasticity, brown, with sandstone and siltstone gravel, trace plastic, metal fragments, brick, w<PL			0.1				
				E	0.4				
					0.5				
	0.65	FILL/Silty CLAY: medium plasticity, dark brown with gravel, plastic, metal, terracotta pipe, fragments of fibre cement sheet (asbestos containing material), w~PL			0.8	A7, A8^	^Fragments of ACM		
1				E	0.9				1
					1.0				
84	1.2	Silty CLAY CI-CH: medium to high plasticity, grey mottled yellow-brown, trace siltstone gravel, w~PL, residual							
				E	1.4				
	1.5	Pit discontinued at 1.5m Target depth reached			1.5				
83	2								2
82	3								3
81	4								4

RIG: 3.5 Tonne excavator (350mm Toothed Bucket)

LOGGED: LT

SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free ground water observed during test pitting.

REMARKS: Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data

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

SAMPLING & IN SITU TESTING LEGEND

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

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TEST PIT LOG

CLIENT: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 85.6 AHD
EASTING: 318279.2
NORTHING: 6260202.3

PIT No: 321
PROJECT No: 86976.01
DATE: 1/5/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
85	0.0	FILL/TOPSOIL/Silty SAND: fine to coarse, dark brown, trace roots, moist		E	0.0 – 0.1				
	0.2	FILL/Silty CLAY: medium plasticity, dark brown, with ironstone and siltstone gravel, trace roots and charcoal, w~PL		E	0.4 – 0.5				
	0.5	Silty CLAY CI-CH: medium to high plasticity, grey mottled orange-brown, with siltstone and ironstone gravel, w~PL, residual		E	0.6 – 0.9				
	1.0	Pit discontinued at 1.0m Target depth reached		E	1.0				
84									
83									
82									
81									

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

RIG: 3.5 Tonne excavator (350mm Toothed Bucket)
LOGGED: LT
SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free ground water observed during test pitting.

REMARKS: Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data

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

SAMPLING & IN SITU TESTING LEGEND

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

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Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 86.0 AHD
EASTING: 318301.3
NORTHING: 6260203.0

PIT No: 322
PROJECT No: 86976.01
DATE: 1/5/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
86	0.0	FILL/Gravelly Silty CLAY: low plasticity, dark brown, silstone gravel, trace rootlets, w~PL		E	0.0				
	0.1				0.1				
	0.3	SILTSTONE: dark grey		E	0.3				
	0.4	Pit discontinued at 0.4m Target depth reached			0.4				
85	1								1
84	2								2
83	3								3
82	4								4

5 10 15 20

RIG: 3.5 Tonne excavator (350mm Toothed Bucket)

LOGGED: LT

SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free ground water observed during test pitting.

REMARKS: Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data

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

SAMPLING & IN SITU TESTING LEGEND

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

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TEST PIT LOG

CLIENT: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 84.7 AHD
EASTING: 318211.0
NORTHING: 6260179.8

PIT No: 323
PROJECT No: 86976.01
DATE: 1/5/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
84	0.0	FILL/TOPSOIL/Silty SAND: fine to medium, dark brown, with clay, moist		E	0.0 - 0.1				
	0.2	FILL/Gravelly CLAY: medium plasticity, brown mottled orange-brown, fine to medium sandstone and siltstone gravel, w~PL		E	0.4 - 0.5				
	0.7	FILL/Gravelly CLAY: low plasticity, grey, fine to medium siltstone, trace ironstone, w~PL		E*	0.9 - 1.0				
				E	1.4 - 1.5				
83	1.6	FILL/Gravelly CLAY: low to medium plasticity, dark brown, fine to medium silstone, trace timber (up to 500 mm in length), w~PL Between 1.6-1.8m: asphaltic concrete gravel and cobbles From 2.0m: w>PL, with timber		E	1.9 - 2.0			▽	
		From 2.5m: w~PL		E	2.4 - 2.5				
82	2.6	Pit discontinued at 2.6m Sidewall collpase in fill							
81									
80									

RIG: 3.5 Tonne excavator (350mm Toothed Bucket)
LOGGED: LT
SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: Water seepage observed at 2.0m in open test pit.

REMARKS: Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data,
*Blind replicate sample BD3/20210501 taken from 0.9-1.0m

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

SAMPLING & IN SITU TESTING LEGEND

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

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Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 85.1 AHD
EASTING: 318248.1
NORTHING: 6260181.1

PIT No: 324
PROJECT No: 86976.01
DATE: 1/5/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
85	0.0			E	0.0				
	0.1				0.1				
	0.2	FILL/TOPSOIL/Silty Sandy CLAY: low plasticity, dark brown, fine to medium sand, with roots. trace gravel, w<PL		E	0.2				
	0.3	FILL/Silty CLAY: medium to high plasticity, pale grey with siltstone gravel, w~PL			0.3				
	0.4			E	0.4				
	0.5	FILL/Silty CLAY: low to medium plasticity, brown with siltstone gravel, w~PL			0.5				
		FILL/Gravelly CLAY: low plasticity, brown and grey, siltstone, w~PL							
	0.9			E	0.9				
84	1.0	FILL/Gravelly CLAY: low to medium plasticity, grey and brown, fine to coarse sandstone gravel, trace concrete, terracotta pipe fragments, glass fragments, w~PL			1.0				1
	1.1			E	1.1				
	1.2				1.2				
	1.8	FILL/Silty CLAY: low to medium plasticity, dark grey, w~PL			1.9				
83	2			E	2.0				2
	2.2	Silty CLAY CI-CH: medium to high plasticity, grey mottled red-brown, with ironstone gravel, w~PL, residual			2.3				
				E	2.4				
	2.5	Pit discontinued at 2.5m Target depth reached							
82	3								3
81	4								4

RIG: 3.5 Tonne excavator (350mm Toothed Bucket)

LOGGED: LT

SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free ground water observed during test pitting.

REMARKS: Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data

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

SAMPLING & IN SITU TESTING LEGEND

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

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TEST PIT LOG

CLIENT: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 85.3 AHD
EASTING: 318278.2
NORTHING: 6260181.7

PIT No: 325
PROJECT No: 86976.01
DATE: 1/5/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm)
85	0.1	FILL/TOPSOIL/Sandy CLAY: low plasticity, dark brown, fine to medium, trace roots, w~PL		E	0.0				
		FILL/Silty CLAY: medium to high plasticity, dark brown with gravel, w~PL			0.1				
	0.5			E	0.4				
		Silty CLAY CI-CH: medium to high plasticity, grey mottled orange-brown with siltstone gravel, w~PL, residual			0.5				
		From 0.7m: gravelly		E	0.8				
	0.9	Pit discontinued at 0.9m Target depth reached			0.9				
84	1								1
83	2								2
82	3								3
81	4								4

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

RIG: 3.5 Tonne excavator (350mm Toothed Bucket)
LOGGED: LT
SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free ground water observed during test pitting.

REMARKS: Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data

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

SAMPLING & IN SITU TESTING LEGEND

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

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TEST PIT LOG

CLIENT: Taylor Construction Pty Ltd
PROJECT: Carlingford West Public School
LOCATION: Felton Road, Carlingford

SURFACE LEVEL: 85.5 AHD
EASTING: 318308.4
NORTHING: 6260179.8

PIT No: 326
PROJECT No: 86976.01
DATE: 1/5/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per mm) 5 10 15 20
		FILL/TOPSOIL/Gravelly CLAY: low plasticity,dark brown, fine to medium igneous gravel, trace sand and roots, w<PL		E	0.0 0.1				
	0.3	SILTSTONE: dark grey		E	0.3				
	0.4	Pit discontinued at 0.4m Target depth reached			0.4				
85	1								1
84	2								2
83	3								3
82	4								4
81									

RIG: 3.5 Tonne excavator (350mm Toothed Bucket)
LOGGED: LT
SURVEY DATUM: MGA94 Zone 56

WATER OBSERVATIONS: No free ground water observed during test pitting.

REMARKS: Coordinates estimated from georeferenced aerials and levels estimated from ELVIS elevation data

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

SAMPLING & IN SITU TESTING LEGEND

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

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Sampling Methods

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Sampling

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

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

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

Test Pits

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

Large Diameter Augers

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

Continuous Spiral Flight Augers

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

Non-core Rotary Drilling

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

Continuous Core Drilling

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

Standard Penetration Tests

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

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

The test results are reported in the following form.

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

  4,6,7
  N=13

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

  15, 30/40 mm

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

Dynamic Cone Penetrometer Tests / Perth Sand Penetrometer Tests

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

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

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 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

Douglas Partners

Introduction

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

Drilling or Excavation Methods

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

Water

▷	Water seep
▽	Water level

Sampling and Testing

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

Description of Defects in Rock

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

Defect Type

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

Orientation

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

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

Coating or Infilling Term

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

Coating Descriptor

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

Shape

cu	curved
ir	irregular
pl	planar
st	stepped
un	undulating

Roughness

po	polished
ro	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

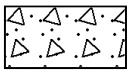
Symbols & Abbreviations

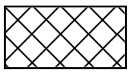
Graphic Symbols for Soil and Rock

General

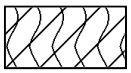

Asphalt

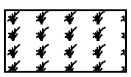

Road base

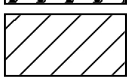

Concrete


Filling

Soils


Topsoil

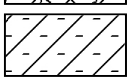

Peat


Clay


Silty clay

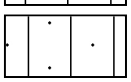

Sandy clay

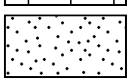

Gravelly clay

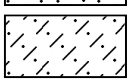

Shaly clay

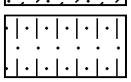

Silt


Clayey silt


Sandy silt

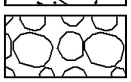

Sand


Clayey sand


Silty sand


Gravel

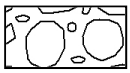

Sandy gravel


Cobbles, boulders

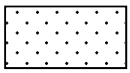

Talus

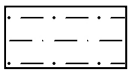
Sedimentary Rocks

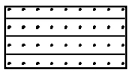

Boulder conglomerate

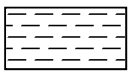

Conglomerate


Conglomeratic sandstone

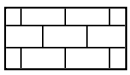

Sandstone


Siltstone

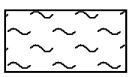

Laminite

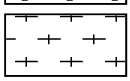

Mudstone, claystone, shale

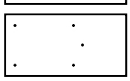

Coal


Limestone

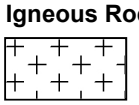
Metamorphic Rocks

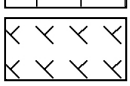

Slate, phyllite, schist

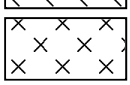

Gneiss

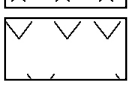

Quartzite

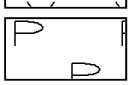
Igneous Rocks


Granite


Dolerite, basalt, andesite


Dacite, epidote


Tuff, breccia


Porphyry

Appendix H

Laboratory Certificates of Analysis, Sample Receipt Advice and Chain of Custody Documentation

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 268120

Client Details

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

Sample Details

Your Reference	**86976.01, Carlingford**
Number of Samples	99 Soil, 4 Material
Date samples received	03/05/2021
Date completed instructions received	03/05/2021

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	06/05/2021
Date of Issue	06/05/2021

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Asbestos Approved By
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vTRH(C6-C10)/BTEXN in Soil						
Our Reference		268120-1	268120-2	268120-3	268120-4	268120-5
Your Reference	UNITS	301	302	302	303	304
Depth		0.1-0.2	0.4-0.5	0.7-0.8	0.1-0.2	0.1-0.2
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
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	%	95	100	82	105	100

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		268120-6	268120-7	268120-8	268120-9	268120-10
Your Reference	UNITS	305	306	307	308	309
Depth		0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.2-0.3
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
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	%	94	92	103	99	97

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		268120-11	268120-12	268120-13	268120-14	268120-15
Your Reference	UNITS	309	310	310	311	312
Depth		1-1.1	0.2-0.3	0.8-0.9	0.4-0.5	0.7-0.8
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
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	%	97	95	98	106	106

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		268120-16	268120-17	268120-18	268120-19	268120-20
Your Reference	UNITS	312	313	313	314	314
Depth		1.3-1.4	0.1-0.2	0.9-1	0.4-0.5	1.3-1.4
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
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	%	94	92	101	104	102

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		268120-21	268120-22	268120-23	268120-25	268120-26
Your Reference	UNITS	314	315	315	316	317
Depth		1.9-2	0-0.1	0.6-0.7	0.4-0.5	0-0.1
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
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	%	99	100	108	101	96

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		268120-27	268120-28	268120-29	268120-30	268120-31
Your Reference	UNITS	318	319	319	319	319
Depth		0-0.1	0.2-0.3	0.4-0.5	1.3-1.4	1.9-2
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
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	%	109	101	77	98	97

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		268120-32	268120-34	268120-35	268120-36	268120-37
Your Reference	UNITS	319	320	320	321	322
Depth		2.4-2.5	0.4-0.5	0.9-1	0.4-0.5	0-0.1
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
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	77	79	76	82

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		268120-39	268120-40	268120-41	268120-42	268120-43
Your Reference	UNITS	323	323	323	324	324
Depth		0.9-1	1.9-2	2.4-2.5	0.9-1	1.1-1.2
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
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	%	76	79	73	78	83

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		268120-46	268120-47	268120-48	268120-49	268120-50
Your Reference	UNITS	235	326	326	BD7/20210501	BD8/20210501
Depth		0.4-0.5	0-0.1	0.3-0.4	-	-
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
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	%	96	108	108	108	105

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		268120-102	268120-103
Your Reference	UNITS	TS	TB
Depth		-	-
Date Sampled		01/05/2021	01/05/2021
Type of sample		Soil	Soil
Date extracted	-	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021
TRH C_6 - C_9	mg/kg	[NA]	<25
TRH C_6 - C_{10}	mg/kg	[NA]	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	[NA]	<25
Benzene	mg/kg	99%	<0.2
Toluene	mg/kg	98%	<0.5
Ethylbenzene	mg/kg	100%	<1
m+p-xylene	mg/kg	100%	<2
o-Xylene	mg/kg	97%	<1
naphthalene	mg/kg	[NA]	<1
Total +ve Xylenes	mg/kg	[NT]	<3
Surrogate aaa-Trifluorotoluene	%	100	88

svTRH (C10-C40) in Soil						
Our Reference		268120-1	268120-2	268120-3	268120-4	268120-5
Your Reference	UNITS	301	302	302	303	304
Depth		0.1-0.2	0.4-0.5	0.7-0.8	0.1-0.2	0.1-0.2
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
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	120	<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	140	<100	<100	160	100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	140	<50	<50	160	100
Surrogate o-Terphenyl	%	105	102	99	102	101

svTRH (C10-C40) in Soil						
Our Reference		268120-6	268120-7	268120-8	268120-9	268120-10
Your Reference	UNITS	305	306	307	308	309
Depth		0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.2-0.3
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
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	110	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	110	<50	<50	<50	<50
Surrogate o-Terphenyl	%	104	101	109	104	102

svTRH (C10-C40) in Soil						
Our Reference		268120-11	268120-12	268120-13	268120-14	268120-15
Your Reference	UNITS	309	310	310	311	312
Depth		1-1.1	0.2-0.3	0.8-0.9	0.4-0.5	0.7-0.8
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
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	140	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	170	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	170	<50	<50	<50
Surrogate o-Terphenyl	%	104	110	101	94	101

svTRH (C10-C40) in Soil						
Our Reference		268120-16	268120-17	268120-18	268120-19	268120-20
Your Reference	UNITS	312	313	313	314	314
Depth		1.3-1.4	0.1-0.2	0.9-1	0.4-0.5	1.3-1.4
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
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	105	101	98	104

svTRH (C10-C40) in Soil						
Our Reference		268120-21	268120-22	268120-23	268120-25	268120-26
Your Reference	UNITS	314	315	315	316	317
Depth		1.9-2	0-0.1	0.6-0.7	0.4-0.5	0-0.1
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
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	160
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	190
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	110
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	300
Surrogate o-Terphenyl	%	97	97	100	106	111

svTRH (C10-C40) in Soil						
Our Reference		268120-27	268120-28	268120-29	268120-30	268120-31
Your Reference	UNITS	318	319	319	319	319
Depth		0-0.1	0.2-0.3	0.4-0.5	1.3-1.4	1.9-2
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
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	120	<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	120	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	220	<50	<50	<50	<50
Surrogate o-Terphenyl	%	94	98	109	108	116

svTRH (C10-C40) in Soil						
Our Reference		268120-32	268120-34	268120-35	268120-36	268120-37
Your Reference	UNITS	319	320	320	321	322
Depth		2.4-2.5	0.4-0.5	0.9-1	0.4-0.5	0-0.1
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
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	%	111	114	119	125	109

svTRH (C10-C40) in Soil						
Our Reference		268120-39	268120-40	268120-41	268120-42	268120-43
Your Reference	UNITS	323	323	323	324	324
Depth		0.9-1	1.9-2	2.4-2.5	0.9-1	1.1-1.2
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
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	107	97	94	93

svTRH (C10-C40) in Soil						
Our Reference		268120-46	268120-47	268120-48	268120-49	268120-50
Your Reference	UNITS	235	326	326	BD7/20210501	BD8/20210501
Depth		0.4-0.5	0-0.1	0.3-0.4	-	-
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
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	120
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	150
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	150
Surrogate o-Terphenyl	%	94	97	95	94	103

PAHs in Soil						
Our Reference		268120-1	268120-2	268120-3	268120-4	268120-5
Your Reference	UNITS	301	302	302	303	304
Depth		0.1-0.2	0.4-0.5	0.7-0.8	0.1-0.2	0.1-0.2
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
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	0.3	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	0.3	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	0.3	<0.2
Benzo(a)pyrene	mg/kg	0.07	<0.05	<0.05	0.2	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	0.07	<0.05	<0.05	1.6	0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	103	107	102	132	119

PAHs in Soil						
Our Reference		268120-6	268120-7	268120-8	268120-9	268120-10
Your Reference	UNITS	305	306	307	308	309
Depth		0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.2-0.3
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	04/05/2021
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	0.4	0.2	0.2	0.1	0.3
Pyrene	mg/kg	0.5	0.2	0.2	0.2	0.3
Benzo(a)anthracene	mg/kg	0.4	0.2	0.1	<0.1	0.4
Chrysene	mg/kg	0.4	0.1	0.1	0.1	0.3
Benzo(b,j+k)fluoranthene	mg/kg	0.6	0.2	0.2	<0.2	0.4
Benzo(a)pyrene	mg/kg	0.4	0.1	0.1	0.09	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	0.2	<0.1	<0.1	<0.1	0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.2	0.1	<0.1	<0.1	0.2
Total +ve PAH's	mg/kg	3.2	1.0	1.0	0.50	2.3
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	0.6	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.6	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	135	130	132	132	110

PAHs in Soil						
Our Reference		268120-11	268120-12	268120-13	268120-14	268120-15
Your Reference	UNITS	309	310	310	311	312
Depth		1-1.1	0.2-0.3	0.8-0.9	0.4-0.5	0.7-0.8
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	03/05/2021	03/05/2021	03/05/2021	04/05/2021	04/05/2021
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	<0.05	<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	%	109	102	120	104	107

PAHs in Soil						
Our Reference		268120-16	268120-17	268120-18	268120-19	268120-20
Your Reference	UNITS	312	313	313	314	314
Depth		1.3-1.4	0.1-0.2	0.9-1	0.4-0.5	1.3-1.4
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
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	<0.05	<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	%	109	105	112	104	109

PAHs in Soil						
Our Reference		268120-21	268120-22	268120-23	268120-25	268120-26
Your Reference	UNITS	314	315	315	316	317
Depth		1.9-2	0-0.1	0.6-0.7	0.4-0.5	0-0.1
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
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	<0.05	0.2
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	105	110	102	116	111

PAHs in Soil						
Our Reference		268120-27	268120-28	268120-29	268120-30	268120-31
Your Reference	UNITS	318	319	319	319	319
Depth		0-0.1	0.2-0.3	0.4-0.5	1.3-1.4	1.9-2
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
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	0.07	<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	0.3	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	108	110	111	114	111

PAHs in Soil						
Our Reference		268120-32	268120-34	268120-35	268120-36	268120-37
Your Reference	UNITS	319	320	320	321	322
Depth		2.4-2.5	0.4-0.5	0.9-1	0.4-0.5	0-0.1
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
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	<0.05	<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	%	107	111	107	107	112

PAHs in Soil						
Our Reference		268120-39	268120-40	268120-41	268120-42	268120-43
Your Reference	UNITS	323	323	323	324	324
Depth		0.9-1	1.9-2	2.4-2.5	0.9-1	1.1-1.2
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
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	0.2
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	0.2
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	0.07
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	0.82
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	%	114	105	109	116	102

PAHs in Soil						
Our Reference		268120-46	268120-47	268120-48	268120-49	268120-50
Your Reference	UNITS	235	326	326	BD7/20210501	BD8/20210501
Depth		0.4-0.5	0-0.1	0.3-0.4	-	-
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
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	<0.05	<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	%	107	110	111	115	114

Organochlorine Pesticides in soil						
Our Reference		268120-1	268120-10	268120-12	268120-14	268120-15
Your Reference	UNITS	301	309	310	311	312
Depth		0.1-0.2	0.2-0.3	0.2-0.3	0.4-0.5	0.7-0.8
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	03/05/2021	04/05/2021	03/05/2021	04/05/2021	04/05/2021
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	%	93	88	85	82	85

Organochlorine Pesticides in soil						
Our Reference		268120-16	268120-17	268120-19	268120-20	268120-23
Your Reference	UNITS	312	313	314	314	315
Depth		1.3-1.4	0.1-0.2	0.4-0.5	1.3-1.4	0.6-0.7
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
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	%	87	89	84	88	88

Organochlorine Pesticides in soil						
Our Reference		268120-32	268120-35	268120-36	268120-40	268120-43
Your Reference	UNITS	319	320	321	323	324
Depth		2.4-2.5	0.9-1	0.4-0.5	1.9-2	1.1-1.2
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
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	%	90	90	92	91	88

Organochlorine Pesticides in soil			
Our Reference		268120-46	268120-50
Your Reference	UNITS	235	BD8/20210501
Depth		0.4-0.5	-
Date Sampled		01/05/2021	01/05/2021
Type of sample		Soil	Soil
Date extracted	-	03/05/2021	03/05/2021
Date analysed	-	03/05/2021	03/05/2021
alpha-BHC	mg/kg	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1
Surrogate TCMX	%	94	93

Organophosphorus Pesticides in Soil						
Our Reference		268120-1	268120-10	268120-12	268120-14	268120-15
Your Reference	UNITS	301	309	310	311	312
Depth		0.1-0.2	0.2-0.3	0.2-0.3	0.4-0.5	0.7-0.8
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	03/05/2021	04/05/2021	03/05/2021	04/05/2021	04/05/2021
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	%	93	88	85	82	85

Organophosphorus Pesticides in Soil						
Our Reference		268120-16	268120-17	268120-19	268120-20	268120-23
Your Reference	UNITS	312	313	314	314	315
Depth		1.3-1.4	0.1-0.2	0.4-0.5	1.3-1.4	0.6-0.7
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
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	%	87	89	84	88	88

Organophosphorus Pesticides in Soil						
Our Reference		268120-32	268120-35	268120-36	268120-40	268120-43
Your Reference	UNITS	319	320	321	323	324
Depth		2.4-2.5	0.9-1	0.4-0.5	1.9-2	1.1-1.2
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
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	%	90	90	92	91	88

Organophosphorus Pesticides in Soil			
Our Reference		268120-46	268120-50
Your Reference	UNITS	235	BD8/20210501
Depth		0.4-0.5	-
Date Sampled		01/05/2021	01/05/2021
Type of sample		Soil	Soil
Date extracted	-	03/05/2021	03/05/2021
Date analysed	-	03/05/2021	03/05/2021
Dichlorvos	mg/kg	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1
Surrogate TCMX	%	94	93

PCBs in Soil						
Our Reference		268120-1	268120-10	268120-12	268120-14	268120-15
Your Reference	UNITS	301	309	310	311	312
Depth		0.1-0.2	0.2-0.3	0.2-0.3	0.4-0.5	0.7-0.8
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	03/05/2021	04/05/2021	03/05/2021	04/05/2021	04/05/2021
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	%	93	88	85	82	85

PCBs in Soil						
Our Reference		268120-16	268120-17	268120-19	268120-20	268120-23
Your Reference	UNITS	312	313	314	314	315
Depth		1.3-1.4	0.1-0.2	0.4-0.5	1.3-1.4	0.6-0.7
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
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	%	87	89	84	88	88

PCBs in Soil						
Our Reference		268120-32	268120-35	268120-36	268120-40	268120-43
Your Reference	UNITS	319	320	321	323	324
Depth		2.4-2.5	0.9-1	0.4-0.5	1.9-2	1.1-1.2
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
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	%	90	90	92	91	88

PCBs in Soil			
Our Reference		268120-46	268120-50
Your Reference	UNITS	235	BD8/20210501
Depth		0.4-0.5	-
Date Sampled		01/05/2021	01/05/2021
Type of sample		Soil	Soil
Date extracted	-	03/05/2021	03/05/2021
Date analysed	-	03/05/2021	03/05/2021
Aroclor 1016	mg/kg	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1
Surrogate TCMX	%	94	93

Acid Extractable metals in soil						
Our Reference		268120-1	268120-2	268120-3	268120-4	268120-5
Your Reference	UNITS	301	302	302	303	304
Depth		0.1-0.2	0.4-0.5	0.7-0.8	0.1-0.2	0.1-0.2
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Arsenic	mg/kg	7	8	9	5	9
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	28	27	28	18	23
Copper	mg/kg	11	13	16	13	17
Lead	mg/kg	24	25	20	32	23
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	5	4	2	6	3
Zinc	mg/kg	18	37	5	27	14

Acid Extractable metals in soil						
Our Reference		268120-6	268120-7	268120-8	268120-9	268120-10
Your Reference	UNITS	305	306	307	308	309
Depth		0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.2-0.3
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Arsenic	mg/kg	6	4	7	6	9
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	20	14	19	20	19
Copper	mg/kg	17	19	23	19	18
Lead	mg/kg	40	79	33	27	47
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	6	6	9	6	7
Zinc	mg/kg	50	100	46	27	46

Acid Extractable metals in soil						
Our Reference		268120-11	268120-12	268120-13	268120-14	268120-15
Your Reference	UNITS	309	310	310	311	312
Depth		1-1.1	0.2-0.3	0.8-0.9	0.4-0.5	0.7-0.8
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Arsenic	mg/kg	5	5	5	7	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	8	15	18	15	6
Copper	mg/kg	19	8	6	9	22
Lead	mg/kg	34	72	14	14	20
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	4	2	3	5
Zinc	mg/kg	10	43	10	23	20
Iron	mg/kg	23,000	[NA]	29,000	[NA]	[NA]

Acid Extractable metals in soil						
Our Reference		268120-16	268120-17	268120-18	268120-19	268120-20
Your Reference	UNITS	312	313	313	314	314
Depth		1.3-1.4	0.1-0.2	0.9-1	0.4-0.5	1.3-1.4
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Arsenic	mg/kg	7	5	5	5	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	0.5
Chromium	mg/kg	17	12	18	13	27
Copper	mg/kg	22	12	8	22	45
Lead	mg/kg	20	16	18	12	49
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	1	4	6	12	21
Zinc	mg/kg	8	23	19	36	92

Acid Extractable metals in soil						
Our Reference		268120-21	268120-22	268120-23	268120-25	268120-26
Your Reference	UNITS	314	315	315	316	317
Depth		1.9-2	0-0.1	0.6-0.7	0.4-0.5	0-0.1
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Arsenic	mg/kg	8	4	5	<4	16
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	10	12	15	8	15
Copper	mg/kg	32	15	24	9	24
Lead	mg/kg	19	26	31	11	48
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	6	7	9	7	10
Zinc	mg/kg	39	60	59	27	74
Iron	mg/kg	33,000	[NA]	[NA]	[NA]	[NA]

Acid Extractable metals in soil						
Our Reference		268120-27	268120-28	268120-29	268120-30	268120-31
Your Reference	UNITS	318	319	319	319	319
Depth		0-0.1	0.2-0.3	0.4-0.5	1.3-1.4	1.9-2
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Arsenic	mg/kg	4	5	9	<4	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	9	12	26	8	15
Copper	mg/kg	20	15	15	23	17
Lead	mg/kg	36	26	23	13	62
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	0.4
Nickel	mg/kg	5	5	5	2	3
Zinc	mg/kg	54	27	32	12	30

Acid Extractable metals in soil						
Our Reference		268120-32	268120-34	268120-35	268120-36	268120-37
Your Reference	UNITS	319	320	320	321	322
Depth		2.4-2.5	0.4-0.5	0.9-1	0.4-0.5	0-0.1
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Arsenic	mg/kg	11	9	7	9	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	14	24	14	14	25
Copper	mg/kg	14	22	17	21	25
Lead	mg/kg	35	35	21	23	48
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	110	11	8	28
Zinc	mg/kg	38	48	24	42	93

Acid Extractable metals in soil						
Our Reference		268120-39	268120-40	268120-41	268120-42	268120-43
Your Reference	UNITS	323	323	323	324	324
Depth		0.9-1	1.9-2	2.4-2.5	0.9-1	1.1-1.2
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Arsenic	mg/kg	<4	6	6	8	8
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	17	14	10	15	12
Copper	mg/kg	26	18	28	13	18
Lead	mg/kg	13	62	23	22	29
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	16	6	8	2	5
Zinc	mg/kg	28	33	48	8	33

Acid Extractable metals in soil						
Our Reference		268120-46	268120-47	268120-48	268120-49	268120-50
Your Reference	UNITS	235	326	326	BD7/20210501	BD8/20210501
Depth		0.4-0.5	0-0.1	0.3-0.4	-	-
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Arsenic	mg/kg	5	<4	<4	8	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	14	7	4	21	18
Copper	mg/kg	20	15	16	12	24
Lead	mg/kg	38	18	14	20	83
Mercury	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Nickel	mg/kg	7	7	3	3	5
Zinc	mg/kg	45	45	22	14	160
Iron	mg/kg	[NA]	[NA]	5,200	[NA]	[NA]

Acid Extractable metals in soil				
Our Reference		268120-104	268120-105	268120-106
Your Reference	UNITS	310 - [TRIPLICATE]	319 - [TRIPLICATE]	323 - [TRIPLICATE]
Depth		0.2-0.3	2.4-2.5	1.9-2
Date Sampled		01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil
Date prepared	-	04/05/2021	04/05/2021	04/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021
Arsenic	mg/kg	6	4	7
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	14	10	20
Copper	mg/kg	11	15	23
Lead	mg/kg	28	28	45
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	6	4	7
Zinc	mg/kg	68	33	38

Misc Soil - Inorg						
Our Reference		268120-1	268120-10	268120-12	268120-14	268120-15
Your Reference	UNITS	301	309	310	311	312
Depth		0.1-0.2	0.2-0.3	0.2-0.3	0.4-0.5	0.7-0.8
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference		268120-16	268120-17	268120-19	268120-20	268120-23
Your Reference	UNITS	312	313	314	314	315
Depth		1.3-1.4	0.1-0.2	0.4-0.5	1.3-1.4	0.6-0.7
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference		268120-32	268120-35	268120-36	268120-40	268120-43
Your Reference	UNITS	319	320	321	323	324
Depth		2.4-2.5	0.9-1	0.4-0.5	1.9-2	1.1-1.2
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg			
Our Reference		268120-46	268120-50
Your Reference	UNITS	235	BD8/20210501
Depth		0.4-0.5	-
Date Sampled		01/05/2021	01/05/2021
Type of sample		Soil	Soil
Date prepared	-	04/05/2021	04/05/2021
Date analysed	-	04/05/2021	04/05/2021
Total Phenolics (as Phenol)	mg/kg	<5	<5

Moisture						
Our Reference		268120-1	268120-2	268120-3	268120-4	268120-5
Your Reference	UNITS	301	302	302	303	304
Depth		0.1-0.2	0.4-0.5	0.7-0.8	0.1-0.2	0.1-0.2
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Moisture	%	14	21	24	14	21

Moisture						
Our Reference		268120-6	268120-7	268120-8	268120-9	268120-10
Your Reference	UNITS	305	306	307	308	309
Depth		0.1-0.2	0.1-0.2	0.1-0.2	0.1-0.2	0.2-0.3
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Moisture	%	19	19	14	19	22

Moisture						
Our Reference		268120-11	268120-12	268120-13	268120-14	268120-15
Your Reference	UNITS	309	310	310	311	312
Depth		1-1.1	0.2-0.3	0.8-0.9	0.4-0.5	0.7-0.8
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Moisture	%	20	11	15	16	10

Moisture						
Our Reference		268120-16	268120-17	268120-18	268120-19	268120-20
Your Reference	UNITS	312	313	313	314	314
Depth		1.3-1.4	0.1-0.2	0.9-1	0.4-0.5	1.3-1.4
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Moisture	%	22	12	15	10	9.4

Moisture						
Our Reference		268120-21	268120-22	268120-23	268120-25	268120-26
Your Reference	UNITS	314	315	315	316	317
Depth		1.9-2	0-0.1	0.6-0.7	0.4-0.5	0-0.1
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Moisture	%	17	13	15	21	24

Moisture						
Our Reference		268120-27	268120-28	268120-29	268120-30	268120-31
Your Reference	UNITS	318	319	319	319	319
Depth		0-0.1	0.2-0.3	0.4-0.5	1.3-1.4	1.9-2
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Moisture	%	17	8.5	23	14	17

Moisture						
Our Reference		268120-32	268120-34	268120-35	268120-36	268120-37
Your Reference	UNITS	319	320	320	321	322
Depth		2.4-2.5	0.4-0.5	0.9-1	0.4-0.5	0-0.1
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Moisture	%	19	18	23	15	19

Moisture						
Our Reference		268120-39	268120-40	268120-41	268120-42	268120-43
Your Reference	UNITS	323	323	323	324	324
Depth		0.9-1	1.9-2	2.4-2.5	0.9-1	1.1-1.2
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Moisture	%	13	21	15	20	18

Moisture						
Our Reference		268120-46	268120-47	268120-48	268120-49	268120-50
Your Reference	UNITS	235	326	326	BD7/20210501	BD8/20210501
Depth		0.4-0.5	0-0.1	0.3-0.4	-	-
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	03/05/2021	03/05/2021	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Moisture	%	21	7.1	10	19	28

Asbestos ID - soils						
Our Reference		268120-1	268120-2	268120-4	268120-5	268120-6
Your Reference	UNITS	301	302	303	304	305
Depth		0.1-0.2	0.4-0.5	0.1-0.2	0.1-0.2	0.1-0.2
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Sample mass tested	g	Approx. 20g	Approx. 20g	Approx. 35g	Approx. 15g	Approx. 25g
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
Asbestos comments	-	NO	NO	NO	NO	NO
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		268120-7	268120-8	268120-9	268120-10	268120-12
Your Reference	UNITS	306	307	308	309	310
Depth		0.1-0.2	0.1-0.2	0.1-0.2	0.2-0.3	0.2-0.3
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Sample mass tested	g	Approx. 25g	Approx. 40g	Approx. 40g	Approx. 20g	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
Asbestos comments	-	NO	NO	NO	NO	NO
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		268120-14	268120-15	268120-16	268120-18	268120-19
Your Reference	UNITS	311	312	312	313	314
Depth		0.4-0.5	0.7-0.8	1.3-1.4	0.9-1	0.4-0.5
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Sample mass tested	g	Approx. 25g	Approx. 35g	Approx. 15g	Approx. 45g	Approx. 50g
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
Asbestos comments	-	NO	NO	NO	NO	NO
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		268120-22	268120-25	268120-26	268120-27	268120-28
Your Reference	UNITS	315	316	317	318	319
Depth		0-0.1	0.4-0.5	0-0.1	0-0.1	0.2-0.3
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Sample mass tested	g	Approx. 35g	Approx. 30g	Approx. 20g	Approx. 25g	Approx. 30g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Asbestos comments	-	NO	NO	NO	NO	NO
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		268120-29	268120-31	268120-32	268120-34	268120-36
Your Reference	UNITS	319	319	319	320	321
Depth		0.4-0.5	1.9-2	2.4-2.5	0.4-0.5	0.4-0.5
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Sample mass tested	g	Approx. 35g	Approx. 20g	Approx. 35g	Approx. 30g	Approx. 35g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Asbestos comments	-	NO	NO	NO	NO	NO
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		268120-37	268120-39	268120-40	268120-41	268120-42
Your Reference	UNITS	322	323	323	323	324
Depth		0-0.1	0.9-1	1.9-2	2.4-2.5	0.9-1
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Sample mass tested	g	Approx. 40g	Approx. 45g	Approx. 25g	Approx. 30g	Approx. 20g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Asbestos comments	-	NO	NO	NO	NO	NO
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils				
Our Reference		268120-43	268120-46	268120-47
Your Reference	UNITS	324	235	326
Depth		1.1-1.2	0.4-0.5	0-0.1
Date Sampled		01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil
Date analysed	-	04/05/2021	04/05/2021	04/05/2021
Sample mass tested	g	Approx. 35g	Approx. 30g	Approx. 50g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Asbestos comments	-	NO	NO	NO
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected

Misc Inorg - Soil					
Our Reference		268120-11	268120-13	268120-21	268120-48
Your Reference	UNITS	309	310	314	326
Depth		1-1.1	0.8-0.9	1.9-2	0.3-0.4
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021
pH 1:5 soil:water	pH Units	3.9	4.3	4.2	4.8

CEC					
Our Reference		268120-11	268120-13	268120-21	268120-48
Your Reference	UNITS	309	310	314	326
Depth		1-1.1	0.8-0.9	1.9-2	0.3-0.4
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Exchangeable Ca	meq/100g	0.7	0.8	0.5	1.4
Exchangeable K	meq/100g	0.2	0.4	0.2	0.2
Exchangeable Mg	meq/100g	1.3	1.1	1.6	2.3
Exchangeable Na	meq/100g	<0.1	<0.1	0.20	0.57
Cation Exchange Capacity	meq/100g	2.4	2.4	2.5	4.4

Clay 50-120g					
Our Reference		268120-11	268120-13	268120-21	268120-48
Your Reference	UNITS	309	310	314	326
Depth		1-1.1	0.8-0.9	1.9-2	0.3-0.4
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Date analysed	-	05/05/2021	05/05/2021	05/05/2021	05/05/2021
Clay in soils <2µm	% (w/w)	63	36	54	39

Asbestos ID - soils NEPM					
Our Reference		268120-17	268120-20	268120-23	268120-35
Your Reference	UNITS	313	314	315	320
Depth		0.1-0.2	1.3-1.4	0.6-0.7	0.9-1
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil	Soil
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Sample mass tested	g	405.72	1,019.75	1,160.25	784.14
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	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
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	Chrysotile	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	0.0817	–
FA and AF Estimation*	g	–	–	–	–
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001

Triazine Herbicides in Soil				
Our Reference		268120-1	268120-17	268120-37
Your Reference	UNITS	301	313	322
Depth		0.1-0.2	0.1-0.2	0-0.1
Date Sampled		01/05/2021	01/05/2021	01/05/2021
Type of sample		Soil	Soil	Soil
Date extracted	-	03/05/2021	03/05/2021	03/05/2021
Date analysed	-	03/05/2021	03/05/2021	03/05/2021
Simazine	mg/kg	<0.5	<0.5	<0.5
Atrazine	mg/kg	<0.5	<0.5	<0.5
Propazine	mg/kg	<0.5	<0.5	<0.5
Terbuthylazine	mg/kg	<0.5	<0.5	<0.5
Metribuzin	mg/kg	<0.5	<0.5	<0.5
Ametryn	mg/kg	<0.5	<0.5	<0.5
Prometryn	mg/kg	<0.5	<0.5	<0.5
Terbutryn	mg/kg	<0.5	<0.5	<0.5
Cyanazine	mg/kg	<0.5	<0.5	<0.5
Irgarol	mg/kg	<0.5	<0.5	<0.5
Hexazinone	mg/kg	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	95	100	102

Asbestos ID - materials					
Our Reference		268120-51	268120-52	268120-53	268120-54
Your Reference	UNITS	314-A1	315-A4	320-A7	313-A9
Depth		-	-	-	-
Date Sampled		01/05/2021	01/05/2021	01/05/2021	01/05/2021
Type of sample		Material	Material	Material	Material
Date analysed	-	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Mass / Dimension of Sample	-	40x20x5mm	50x50x5mm	80x45x5mm	40x30x5mm
Sample Description	-	Beige fibre cement material	Beige fibre cement material	Beige fibre cement material	Beige fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected	Chrysotile asbestos detected	Chrysotile asbestos detected	Chrysotile asbestos detected
Trace Analysis	-	[NT]	[NT]	[NT]	[NT]

Method ID	Methodology Summary
AS1289.3.6.3	Determination Particle Size Analysis using AS1289.3.6.3 and AS1289.3.6.1 and in house method INORG-107. Clay fraction at <2µm reported.
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. **NOTE** #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF) **NOTE** #2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
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.

Method ID	Methodology Summary
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.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
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.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	268120-10
Date extracted	-			03/05/2021	1	03/05/2021	03/05/2021		03/05/2021	03/05/2021
Date analysed	-			04/05/2021	1	04/05/2021	04/05/2021		04/05/2021	04/05/2021
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	99	101
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	99	101
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	119	119
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	111	109
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	93	95
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	87	90
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	91	92
naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	87	1	95	92	3	105	104

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	268120-19
Date extracted	-			[NT]	12	03/05/2021	03/05/2021		03/05/2021	03/05/2021
Date analysed	-			[NT]	12	04/05/2021	04/05/2021		04/05/2021	04/05/2021
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	12	<25	<25	0	96	86
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	12	<25	<25	0	96	86
Benzene	mg/kg	0.2	Org-023	[NT]	12	<0.2	<0.2	0	112	100
Toluene	mg/kg	0.5	Org-023	[NT]	12	<0.5	<0.5	0	103	91
Ethylbenzene	mg/kg	1	Org-023	[NT]	12	<1	<1	0	91	82
m+p-xylene	mg/kg	2	Org-023	[NT]	12	<2	<2	0	87	78
o-Xylene	mg/kg	1	Org-023	[NT]	12	<1	<1	0	88	80
naphthalene	mg/kg	1	Org-023	[NT]	12	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	12	95	94	1	98	86

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	268120-36
Date extracted	-			[NT]	16	03/05/2021	03/05/2021		03/05/2021	03/05/2021
Date analysed	-			[NT]	16	04/05/2021	04/05/2021		04/05/2021	04/05/2021
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	16	<25	<25	0	112	101
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	16	<25	<25	0	112	101
Benzene	mg/kg	0.2	Org-023	[NT]	16	<0.2	<0.2	0	132	120
Toluene	mg/kg	0.5	Org-023	[NT]	16	<0.5	<0.5	0	124	109
Ethylbenzene	mg/kg	1	Org-023	[NT]	16	<1	<1	0	106	96
m+p-xylene	mg/kg	2	Org-023	[NT]	16	<2	<2	0	99	91
o-Xylene	mg/kg	1	Org-023	[NT]	16	<1	<1	0	104	92
naphthalene	mg/kg	1	Org-023	[NT]	16	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	16	94	89	5	92	83

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]	32	03/05/2021	03/05/2021		[NT]	[NT]
Date analysed	-			[NT]	32	04/05/2021	04/05/2021		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	32	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	32	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	32	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	32	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	32	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	32	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	32	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-023	[NT]	32	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	32	101	96	5	[NT]	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	40	03/05/2021	03/05/2021		[NT]	[NT]
Date analysed	-			[NT]	40	04/05/2021	04/05/2021		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	40	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	40	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	40	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	40	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	40	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	40	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	40	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-023	[NT]	40	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	40	79	79	0	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	268120-10
Date extracted	-			03/05/2021	1	03/05/2021	03/05/2021		03/05/2021	03/05/2021
Date analysed	-			04/05/2021	1	04/05/2021	04/05/2021		04/05/2021	04/05/2021
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	<50	<50	0	103	86
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	<100	<100	0	89	77
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	<100	<100	0	124	111
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	<50	<50	0	103	86
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	140	100	33	89	77
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	<100	<100	0	124	111
Surrogate o-Terphenyl	%		Org-020	99	1	105	104	1	130	102

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	268120-19
Date extracted	-			[NT]	12	03/05/2021	03/05/2021		03/05/2021	03/05/2021
Date analysed	-			[NT]	12	04/05/2021	04/05/2021		04/05/2021	04/05/2021
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	12	<50	<50	0	94	90
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	12	<100	140	33	78	81
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	12	140	250	56	138	108
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	12	<50	<50	0	94	90
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	12	170	310	58	78	81
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	12	<100	150	40	138	108
Surrogate o-Terphenyl	%		Org-020	[NT]	12	110	111	1	123	98

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	268120-36
Date extracted	-			[NT]	16	03/05/2021	03/05/2021		03/05/2021	03/05/2021
Date analysed	-			[NT]	16	04/05/2021	04/05/2021		04/05/2021	04/05/2021
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	16	<50	<50	0	108	100
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	16	<100	<100	0	84	81
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	16	<100	<100	0	138	112
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	16	<50	<50	0	108	100
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	16	<100	110	10	84	81
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	16	<100	<100	0	138	112
Surrogate o-Terphenyl	%		Org-020	[NT]	16	96	96	0	119	84

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	32	03/05/2021	03/05/2021		[NT]	[NT]
Date analysed	-			[NT]	32	04/05/2021	04/05/2021		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	32	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	32	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	32	<100	140	33	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	32	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	32	<100	190	62	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	32	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	32	111	114	3	[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]	40	03/05/2021	03/05/2021		[NT]	[NT]
Date analysed	-			[NT]	40	04/05/2021	04/05/2021		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	40	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	40	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	40	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	40	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	40	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	40	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	40	107	93	14	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	268120-10
Date extracted	-			03/05/2021	1	03/05/2021	03/05/2021		03/05/2021	03/05/2021
Date analysed	-			03/05/2021	1	03/05/2021	03/05/2021		03/05/2021	03/05/2021
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	110	84
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	88	76
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	79	73
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	113	96
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	104
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	0.1	0	104	105
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	86	104
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	0.07	0.09	25	103	87
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	113	1	103	106	3	126	113

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	268120-19
Date extracted	-			[NT]	12	03/05/2021	03/05/2021		03/05/2021	03/05/2021
Date analysed	-			[NT]	12	03/05/2021	03/05/2021		03/05/2021	03/05/2021
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	123	87
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	89	78
Fluorene	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	89	82
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	107	82
Anthracene	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	100	82
Pyrene	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	102	82
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	102	71
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	12	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	12	<0.05	<0.05	0	76	84
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	12	102	107	5	124	108

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	268120-36
Date extracted	-			[NT]	16	03/05/2021	03/05/2021		03/05/2021	03/05/2021
Date analysed	-			[NT]	16	04/05/2021	03/05/2021		03/05/2021	03/05/2021
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	99	86
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	86	88
Fluorene	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	96	75
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	111	81
Anthracene	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	96	81
Pyrene	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	96	82
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	88	73
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	16	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	16	<0.05	<0.05	0	93	78
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	16	109	102	7	123	112

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	32	03/05/2021	03/05/2021		[NT]	[NT]
Date analysed	-			[NT]	32	03/05/2021	03/05/2021		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	0.2	67	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	0.2	67	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	0.2	67	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	32	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	32	<0.05	0.09	57	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	32	107	109	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]	40	03/05/2021	03/05/2021		[NT]	[NT]
Date analysed	-			[NT]	40	03/05/2021	03/05/2021		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	40	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	40	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	40	105	103	2	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	268120-36
Date extracted	-			03/05/2021	1	03/05/2021	03/05/2021		03/05/2021	03/05/2021
Date analysed	-			03/05/2021	1	03/05/2021	03/05/2021		03/05/2021	03/05/2021
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	90	82
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	85	72
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	105	75
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	117	88
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	112	76
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	104	91
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	121	103
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	109	84
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	94
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	107	84
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	112	1	93	87	7	87	86

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	12	03/05/2021	03/05/2021		[NT]	[NT]
Date analysed	-			[NT]	12	03/05/2021	03/05/2021		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	12	85	84	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]	16	03/05/2021	03/05/2021		[NT]	[NT]
Date analysed	-			[NT]	16	04/05/2021	03/05/2021		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	16	87	87	0	[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]	32	03/05/2021	03/05/2021		[NT]	[NT]
Date analysed	-			[NT]	32	03/05/2021	03/05/2021		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	32	90	89	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]	40	03/05/2021	03/05/2021		[NT]	[NT]
Date analysed	-			[NT]	40	03/05/2021	03/05/2021		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	40	91	89	2	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	268120-36
Date extracted	-			03/05/2021	1	03/05/2021	03/05/2021		03/05/2021	03/05/2021
Date analysed	-			03/05/2021	1	03/05/2021	03/05/2021		03/05/2021	03/05/2021
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	76	78
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	88	79
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	73	81
Malathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	100	80
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	95	78
Parathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	78	86
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	85	75
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	112	1	93	87	7	87	86

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	12	03/05/2021	03/05/2021		[NT]	[NT]
Date analysed	-			[NT]	12	03/05/2021	03/05/2021		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	12	85	84	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]	16	03/05/2021	03/05/2021		[NT]	[NT]
Date analysed	-			[NT]	16	04/05/2021	03/05/2021		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	16	87	87	0	[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]	32	03/05/2021	03/05/2021		[NT]	[NT]
Date analysed	-			[NT]	32	03/05/2021	03/05/2021		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	32	90	89	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]	40	03/05/2021	03/05/2021		[NT]	[NT]
Date analysed	-			[NT]	40	03/05/2021	03/05/2021		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	40	91	89	2	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	268120-36
Date extracted	-			03/05/2021	1	03/05/2021	03/05/2021		03/05/2021	03/05/2021
Date analysed	-			03/05/2021	1	03/05/2021	03/05/2021		03/05/2021	03/05/2021
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	80
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	112	1	93	87	7	87	86

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	12	03/05/2021	03/05/2021		[NT]	[NT]
Date analysed	-			[NT]	12	03/05/2021	03/05/2021		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	12	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	12	85	84	1	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	16	03/05/2021	03/05/2021		[NT]	[NT]
Date analysed	-			[NT]	16	04/05/2021	03/05/2021		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	16	87	87	0	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	32	03/05/2021	03/05/2021		[NT]	[NT]
Date analysed	-			[NT]	32	03/05/2021	03/05/2021		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	32	90	89	1	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	40	03/05/2021	03/05/2021		[NT]	[NT]
Date analysed	-			[NT]	40	03/05/2021	03/05/2021		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	40	91	89	2	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	268120-10
Date prepared	-			04/05/2021	1	04/05/2021	04/05/2021		04/05/2021	04/05/2021
Date analysed	-			04/05/2021	1	04/05/2021	04/05/2021		04/05/2021	04/05/2021
Arsenic	mg/kg	4	Metals-020	<4	1	7	6	15	93	93
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	98	100
Chromium	mg/kg	1	Metals-020	<1	1	28	23	20	108	109
Copper	mg/kg	1	Metals-020	<1	1	11	10	10	98	102
Lead	mg/kg	1	Metals-020	<1	1	24	22	9	110	105
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	97	90
Nickel	mg/kg	1	Metals-020	<1	1	5	4	22	100	109
Zinc	mg/kg	1	Metals-020	<1	1	18	15	18	104	99
Iron	mg/kg	10	Metals-020	<10	[NT]	[NT]	[NT]	[NT]	130	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	268120-19
Date prepared	-			[NT]	12	04/05/2021	04/05/2021		04/05/2021	04/05/2021
Date analysed	-			[NT]	12	04/05/2021	04/05/2021		04/05/2021	04/05/2021
Arsenic	mg/kg	4	Metals-020	[NT]	12	5	4	22	96	91
Cadmium	mg/kg	0.4	Metals-020	[NT]	12	<0.4	<0.4	0	98	101
Chromium	mg/kg	1	Metals-020	[NT]	12	15	12	22	105	108
Copper	mg/kg	1	Metals-020	[NT]	12	8	13	48	100	99
Lead	mg/kg	1	Metals-020	[NT]	12	72	23	103	109	98
Mercury	mg/kg	0.1	Metals-021	[NT]	12	<0.1	<0.1	0	88	82
Nickel	mg/kg	1	Metals-020	[NT]	12	4	5	22	98	103
Zinc	mg/kg	1	Metals-020	[NT]	12	43	57	28	101	80

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-12	268120-36
Date prepared	-			[NT]	16	04/05/2021	04/05/2021		04/05/2021	04/05/2021
Date analysed	-			[NT]	16	04/05/2021	04/05/2021		04/05/2021	04/05/2021
Arsenic	mg/kg	4	Metals-020	[NT]	16	7	7	0	102	75
Cadmium	mg/kg	0.4	Metals-020	[NT]	16	<0.4	<0.4	0	106	91
Chromium	mg/kg	1	Metals-020	[NT]	16	17	17	0	105	91
Copper	mg/kg	1	Metals-020	[NT]	16	22	21	5	117	95
Lead	mg/kg	1	Metals-020	[NT]	16	20	19	5	119	87
Mercury	mg/kg	0.1	Metals-021	[NT]	16	<0.1	<0.1	0	99	79
Nickel	mg/kg	1	Metals-020	[NT]	16	1	2	67	100	86
Zinc	mg/kg	1	Metals-020	[NT]	16	8	9	12	120	76

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	32	04/05/2021	04/05/2021		[NT]	[NT]
Date analysed	-			[NT]	32	04/05/2021	04/05/2021		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	32	11	<4	93	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	32	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	32	14	9	43	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	32	14	15	7	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	32	35	28	22	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	32	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	32	4	2	67	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	32	38	40	5	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	40	04/05/2021	04/05/2021		[NT]	[NT]
Date analysed	-			[NT]	40	04/05/2021	04/05/2021		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	40	6	6	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	40	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	40	14	16	13	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	40	18	20	11	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	40	62	38	48	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	40	6	6	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	40	33	33	0	[NT]	[NT]

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	268120-10
Date prepared	-			04/05/2021	1	04/05/2021	04/05/2021		04/05/2021	04/05/2021
Date analysed	-			04/05/2021	1	04/05/2021	04/05/2021		04/05/2021	04/05/2021
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	1	<5	<5	0	105	108

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	32	04/05/2021	04/05/2021		[NT]	[NT]
Date analysed	-			[NT]	32	04/05/2021	04/05/2021		[NT]	[NT]
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	[NT]	32	<5	<5	0	[NT]	[NT]

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	[NT]
Date prepared	-			04/05/2021	[NT]	[NT]	[NT]	[NT]	04/05/2021	[NT]
Date analysed	-			04/05/2021	[NT]	[NT]	[NT]	[NT]	04/05/2021	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	[NT]	[NT]	[NT]	[NT]	100	[NT]

QUALITY CONTROL: CEC						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	268120-13
Date prepared	-			04/05/2021	11	04/05/2021	04/05/2021		04/05/2021	04/05/2021
Date analysed	-			04/05/2021	11	04/05/2021	04/05/2021		04/05/2021	04/05/2021
Exchangeable Ca	meq/100g	0.1	Metals-020	<0.1	11	0.7	0.7	0	103	103
Exchangeable K	meq/100g	0.1	Metals-020	<0.1	11	0.2	0.2	0	105	106
Exchangeable Mg	meq/100g	0.1	Metals-020	<0.1	11	1.3	1.3	0	97	101
Exchangeable Na	meq/100g	0.1	Metals-020	<0.1	11	<0.1	<0.1	0	104	105

QUALITY CONTROL: Triazine Herbicides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	[NT]
Date extracted	-			03/05/2021	1	03/05/2021	03/05/2021		03/05/2021	[NT]
Date analysed	-			03/05/2021	1	03/05/2021	03/05/2021		03/05/2021	[NT]
Simazine	mg/kg	0.5	Org-022/025	[NT]	1	<0.5	<0.5	0	[NT]	[NT]
Atrazine	mg/kg	0.5	Org-022/025	[NT]	1	<0.5	<0.5	0	100	[NT]
Propazine	mg/kg	0.5	Org-022/025	[NT]	1	<0.5	<0.5	0	96	[NT]
Terbuthylazine	mg/kg	0.5	Org-022/025	[NT]	1	<0.5	<0.5	0	[NT]	[NT]
Metribuzin	mg/kg	0.5	Org-022/025	[NT]	1	<0.5	<0.5	0	[NT]	[NT]
Ametryn	mg/kg	0.5	Org-022/025	[NT]	1	<0.5	<0.5	0	[NT]	[NT]
Prometryn	mg/kg	0.5	Org-022/025	[NT]	1	<0.5	<0.5	0	112	[NT]
Terbutryn	mg/kg	0.5	Org-022/025	[NT]	1	<0.5	<0.5	0	[NT]	[NT]
Cyanazine	mg/kg	0.5	Org-022/025	[NT]	1	<0.5	<0.5	0	[NT]	[NT]
Irgarol	mg/kg	0.5	Org-022/025	[NT]	1	<0.5	<0.5	0	[NT]	[NT]
Hexazinone	mg/kg	0.5	Org-022/025	[NT]	1	<0.5	<0.5	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	105	1	95	108	13	99	[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.

Report Comments

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

Factual description of asbestos identified in the soil samples: NEPM
Sample 268120-23; Chrysotile asbestos identified in 0.5444g of fibre cement material >7mm

Note: All samples analysed as received. However, sample 268120-17 is below the minimum 500mL sample volume as per National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013.

Asbestos: A portion of the supplied samples were sub-sampled for asbestos analysis according to Envirolab procedures.
We cannot guarantee that these sub-samples are indicative of the entire sample.
Envirolab recommends supplying 40-50g of sample in its own container.
Note: Samples 268120-1-2,4-10,12,14-16,19,22,25-29,31-32,34,36-37,39-43,46-47 were sub-sampled from jars provided by the client.

Asbestos: Excessive sample volume was provided for asbestos analysis.
A portion of the supplied sample was sub-sampled according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample.
Envirolab recommends supplying 40-50g (50mL) of sample in its own container as per AS4964-2004.
Note: Sample 268120-18 was sub-sampled from a bag provided by the client.

Acid Extractable Metals in Soil:
- The laboratory RPD acceptance criteria has been exceeded for 268120-12 for Cu and Pb. Therefore a triplicate result has been issued as laboratory sample number 268120-104.
- The laboratory RPD acceptance criteria has been exceeded for 268120-32 for Cr. Therefore a triplicate result has been issued as laboratory sample number 268120-105.
- The laboratory RPD acceptance criteria has been exceeded for 268120-40 for Pb. Therefore a triplicate result has been issued as laboratory sample number 268120-106.

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CHAIN OF CUSTODY DESPATCH SHEET

Project No:	86976.01	**Suburb:**	Carlingford	**To:**	*Envirolab Services*
Project Manager:	Lisa Teng	**Order Number:**		**Sampler:**	LT/HD		*12 Ashley St, Chatswood NSW 2067*
Email:	Lisa.Teng@douglaspartners.com.au					**Attn:**	*Sample Receipt*
Turnaround time:	☐ Standard ☐ 72 hour ☐ 48 hour ☑ 24 hour ☐ Same day					**Contact:**	*(02) 9910 6200 samplereceipt@envirolab.com.au*
Prior Storage:	☑ Fridge ☐ Freezer ☐ Shelf	**Do samples contain 'potential' HBM?**	☐ No ☑ Yes (If YES, then handle, transport and store in accordance with FPM HAZID)				

Lab ID	Sample ID: Location / Other ID	Depth From	Depth To	Date Sampled	Sample Type: S - soil W - water	Container Type: G - glass P - plastic	Analytes: Combo 8a	Combo 8	Combo 3a	Combo 3	ph, Cec, clay contect, iron	TRH/BTEX	Asbestos in Material	Asbestos 500ml	NEPM 2013 HIL Suite 2 (herbicides)			Notes/ Preservation/ Additional Requirements
1	301	0.1	0.2	1/05/21	s	g/p	x								x			
2	302	0.4	0.5	1/05/21	s	g/p			x									
3	302	0.7	0.8	1/05/21	s	g/p				X								
4	303	0.1	0.2	1/05/21	s	g/p			X									
5	304	0.1	0.2	1/05/21	s	g/p			X									
6	305	0.1	0.2	1/05/21	s	g/p			X									
7	306	0.1	0.2	1/05/21	s	g/p			X									
8	307	0.1	0.2	1/05/21	s	g/p			X									
9	308	0.1	0.2	1/05/21	s	g/p			X									
10	309	0.2	0.3	1/05/21	s	g/p	X											
11	309	1	1.1	1/05/21	s	g/p				X	X							
12	310	0.2	0.3	1/05/21	s	g/p	X											
13	310	0.8	0.9	1/05/21	s	g/p				X	X							
14	311	0.4	0.5	1/05/21	s	g/p	X											

Metals to analyse:			
Number of samples in container:		**Transported to laboratory by:**	Courier
Send results to:	Douglas Partners Pty Ltd		
Address:	96 Hermitage Road, West Ryde NSW 2114	**Phone:**	(02) 9809 0666
Relinquished by:	LT	**Date:**	03/05/2021 **Signed:**

LAB RECEIPT	268120
Lab Ref. No:	ES2108
Received by:	C McKenzie
Date & Time:	3/5/21 1245
Signed:	

Douglas Partners
Geotechnics | Environment | Groundwater

208120

CHAIN OF CUSTODY DESPATCH SHEET

Project No: 86976.01	**Suburb:** Carlingford		**To:** *Envirolab Services*
Project Manager: Lisa Teng	**Order Number:**	**Dispatch date:** 03/05/2021	*12 Ashley St, Chatswood NSW 2067*

Lab ID	Sample ID: Location / Other ID	Depth From	Depth To	Date Sampled	Sample Type: S - soil W - water	Container Type: G - glass P - plastic	Analytes: Combo 8a	Combo 8	Combo 3a	Combo 3	ph, Cec, clay contect, iron	TRH/BTEX	Asbestos in Material	Asbestos 500ml	NEPM 2013 HIL Suite 2 (herbicides)		hold	Notes/ Preservation/ Additional Requirements
15	312	0.7	0.8	1/05/21	s	g/p	X											
16	312	1.3	1.4	1/05/21	s	g/p	X											
17	313	0.1	0.2	1/05/21	s	g/p		X						x	x			
18	313	0.9	1	1/05/21	s	g/p			X									
19	314	0.4	0.5	1/05/21	s	g/p	X											
20	314	1.3	1.4	1/05/21	s	g/p		x						x				
21	314	1.9	2	1/05/21	s	g/p				x	x							
22	315	0	0.1	1/05/21	s	g/p			x									
23	315	0.6	0.7	1/05/21	s	g/p		x						x				
24	315	0.9	1	1/05/21	s	g/p											x	
25	316	0.4	0.5	1/05/21	s	g/p			x									
26	317	0	0.1	1/05/21	s	g/p			X									
27	318	0	0.1	1/05/21	s	g/p			x									
28	319	0.2	0.3	1/05/21	s	g/p			x									
29	319	0.4	0.5	1/05/21	s	g/p			x									
30	319	1.3	1.4	1/05/21	s	g/p				x								
31	319	1.9	2	1/05/21	s	g/p			x									
32	319	2.4	2.5	1/05/21	s	g/p	x											

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208120.

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	86976.01	**Suburb:** Carlingford	**To:** *Envirolab Services*
Project Manager:	96 Hermitage Road, West Ryde NSW		**Dispatch date:**

Lab ID	Sample ID: Location / Other ID	Depth From	Depth To	Date Sampled	Sample Type: S - soil W - water	Container Type: G - glass P - plastic	Analytes: Combo 8a	Combo 8	Combo 3a	Combo 3	ph, Cec, clay contect, iron	TRH/BTEX	Asbestos in Material	Asbestos 500ml	NEPM 2013 HIL Suite 2 (herbicides)		hold	Notes/ Preservation/ Additional Requirements
33	319	2.9	3	1/05/21	s	g/p											x	All other samples not listed on hold please
34	320	0.4	0.5	1/05/21	s	g/p			x									
35	320	0.9	1	1/05/21	s	g/p		x						x				
36	321	0.4	0.5	1/05/21	s	g/p	x											
37	322	0	0.1	1/05/21	s	g/p			x						x			
38	323	0.4	0.5	1/05/21	s	g/p											X	
39	323	0.9	1	1/05/21	s	g/p			X									
40	323	1.9	2	1/05/21	s	g/p	x											
41	323	2.4	2.5	1/05/21	s	g/p			x									
42	324	0.9	1	1/05/21	s	g/p			x									
43	324	1.1	1.2	1/05/21	s	g/p	x											
44	324	1.9	2	1/05/21	s	g/p											x	
45	324	2.3	2.4	1/05/21	s	g/p											x	
46	235	0.4	0.5	1/05/21	s	g/p	x											
47	326	0	0.1	1/05/21	s	g/p			x									
48	326	0.3	0.4	1/05/21	s	g/p				x	x							
49	BD7/20210501	-	-	1/05/21	s	g/p				X								
50	BD8/20210501	-	-	1/05/21	s	g/p		x										
51	314-A1			1/05/21	s	P							X					

Project Manager:			**Dispatch date:**

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

208120

Project No: 86976.01 **Suburb:** Carlingford **To:** Envirolab Services

Lab ID	Sample ID: Location / Other ID	Depth From	Depth To	Date Sampled	Sample Type: S - soil W - water	Container Type: G - glass P - plastic	Analytes: Combo 8a	Combo 8	Combo 3a	Combo 3	ph, Cec, clay contect, iron	TRH/BTEX	Asbestos in Material	Asbestos 500ml	NEPM 2013 HIL Suite 2 (herbicides)		hold	Notes/ Preservation/ Additional Requirements
52	315-A4												X					
53	320-A7												X					
54	313-A9												X					
55	302	0.1	-0.2															
56	303	0.4	-0.5															
57	305	0.6	-0.7															
58	306	0.6	-0.7															
59	307	0.6	-0.7															
60	308	0.6	-0.7															
61	309	0.7	-0.8															
62	310	0.5	-0.6															
63	311	0.2	-0.3															
64	311	0.6	-0.7															
65	312	0.1	-0.2															
66	312	1.0	-1.1															
67	312	1.5	-1.6															
68	312	1.6	-1.7															
69	313	0.6	-0.7															
70	313	1.4	-1.5															
71	314	0.	0.1															

CHAIN OF CUSTODY FORM - Client

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National phone number 1300 424 344

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12 Ashley St, Chatswood, NSW 2067
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Perth Lab - MPL Laboratories
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08 9317 2505 | lab@mpl.com.au

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25 Research Drive, Croydon South, VIC 3136
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Brisbane Office - Envirolab Services
20a, 10-20 Depot St, Banyo, QLD 4014
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Darwin Office - Envirolab Services
Unit 20/119 Reichardt Road, Winnellie, NT 0820
08 8967 1201 | darwin@envirolab.com.au

Company:		Client Project Name/Number/Site etc (ie report title):	
Contact Person:			
Project Mgr:		PO No. (if applicable):	
Sampler:		Envirolab Quote No. :	
Address:		Date results required:	
		Or choose: ☐ Standard ☐ Same Day ☐ 1 day ☐ 2 day ☐ 3 day	
Phone:	Mob:	*Note: Inform lab in advance if urgent turnaround is required - surcharges apply*	
Email Results to:		Additional report format: ☐ Esdat ☐ Equis	
Email Invoice to:		Lab Comments:	

Sample information					Tests Required															Comments
Envirolab Sample ID (Lab use only)	Client Sample ID or Information	Depth	Date Sampled	Type of Sample																Provide as much information about the sample as you can
72	314	0.9-1.0																		
73	314	1.4-1.5																		
74	315	0.4-0.5																		
75	315	1.4-1.5																		
76	316	0-0.1																		
77	316	0.5-0.6																		
78	317	0.4-0.5																		
79	318	0.4-0.5																		
80	319	-0.0																		
81	319	1.4-1.5																		
82	319	2.7-2.8																		

☐ *Please tick the box if observed settled sediment present in water samples is to be included in the extraction and/or analysis*

Relinquished by (Company):	Received by (Company):	*Lab Use Only*	
Print Name:	Print Name:	Job number:	Cooling: Ice / Ice pack / None
Date & Time:	Date & Time:	Temperature:	Security seal: Intact / Broken / None
Signature:	Signature:	TAT Req - SAME day / 1 / 2 / 3 / 4 / STD	

CHAIN OF CUSTODY FORM - Client

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Company:		Client Project Name/Number/Site etc (ie report title):	
Contact Person:			
Project Mgr:		PO No. (if applicable):	
Sampler:		Envirolab Quote No. :	
Address:		Date results required: Or choose: ☐ Standard ☐ Same Day ☐ 1 day ☐ 2 day ☐ 3 day	
Phone:	Mob:	*Note: Inform lab in advance if urgent turnaround is required - surcharges apply*	
Email Results to:		Additional report format: ☐ Esdat ☐ Equis	
Email Invoice to:		Lab Comments:	

Sample information					Tests Required	Comments
Envirolab Sample ID (Lab use only)	Client Sample ID or Information	Depth	Date Sampled	Type of Sample		Provide as much information about the sample as you can
83	320 0-0.1					
84	320 1.4-1.5					
85	321 0.5-0.6					
86	321 0.9-1.0					
87	322 0.2-0.4					
88	323 0-0.1					
89	324 0.2-0.3					
90	323 1.4-1.5					
91	324 0-0.1					
92	324 0.4-0.5					
93	325 0-0.1					

☐ *Please tick the box if observed settled sediment present in water samples is to be included in the extraction and/or analysis*

Relinquished by (Company):	Received by (Company):	*Lab Use Only*	
Print Name:	Print Name:	Job number:	Cooling: Ice / Ice pack / None
Date & Time:	Date & Time:	Temperature:	Security seal: Intact / Broken / None
Signature:	Signature:	TAT Req - SAME day / 1 / 2 / 3 / 4 / STD	

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Project Mgr:		PO No. (if applicable):	
Sampler:		Envirolab Quote No. :	
Address:		Date results required:	
		Or choose: ☐ Standard ☐ Same Day ☐ 1 day ☐ 2 day ☐ 3 day	
Phone:	Mob:	*Note: Inform lab in advance if urgent turnaround is required - surcharges apply*	
Email Results to:		Additional report format: ☐ Esdat ☐ Equis	
Email Invoice to:		Lab Comments:	

Sample information					Tests Required															Comments
Envirolab Sample ID (Lab use only)	Client Sample ID or Information	Depth	Date Sampled	Type of Sample																Provide as much information about the sample as you can
94	325 0.8-0.9																			
95	BD1																			
96	BD2																			
97	BD3																			
98	BD5																			
99	BD6																			
100	331 0-0.1																			
101	TP31 0-8-0.9																			
102	TS																			
103	TB.																			

☐ *Please tick the box if observed settled sediment present in water samples is to be included in the extraction and/or analysis*

Relinquished by (Company):	Received by (Company):	*Lab Use Only*	
Print Name:	Print Name:	Job number:	Cooling: Ice / Ice pack / None
Date & Time:	Date & Time:	Temperature:	Security seal: Intact / Broken / None
Signature:	Signature:	TAT Req - SAME day / 1 / 2 / 3 / 4 / STD	

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	86976.01, Carlingford
Envirolab Reference	268120
Date Sample Received	03/05/2021
Date Instructions Received	03/05/2021
Date Results Expected to be Reported	04/05/2021

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	99 Soil, 4 Material
Turnaround Time Requested	1 day
Temperature on Receipt (°C)	10.0
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

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:

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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	Clay 50-120g	Asbestos ID - soils NEPM	Triazine Herbicides in Soil	Asbestos ID - materials	On Hold
301-0.1-0.2	✓	✓	✓	✓	✓	✓	✓	✓	✓					✓		
302-0.4-0.5	✓	✓	✓				✓		✓							
302-0.7-0.8	✓	✓	✓				✓									
303-0.1-0.2	✓	✓	✓				✓		✓							
304-0.1-0.2	✓	✓	✓				✓		✓							
305-0.1-0.2	✓	✓	✓				✓		✓							
306-0.1-0.2	✓	✓	✓				✓		✓							
307-0.1-0.2	✓	✓	✓				✓		✓							
308-0.1-0.2	✓	✓	✓				✓		✓							
309-0.2-0.3	✓	✓	✓	✓	✓	✓	✓	✓	✓							
309-1-1.1	✓	✓	✓				✓			✓	✓	✓				
310-0.2-0.3	✓	✓	✓	✓	✓	✓	✓	✓	✓							
310-0.8-0.9	✓	✓	✓				✓			✓	✓	✓				
311-0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓							
312-0.7-0.8	✓	✓	✓	✓	✓	✓	✓	✓	✓							
312-1.3-1.4	✓	✓	✓	✓	✓	✓	✓	✓	✓							
313-0.1-0.2	✓	✓	✓	✓	✓	✓	✓	✓					✓	✓		
313-0.9-1	✓	✓	✓				✓		✓							
314-0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓							
314-1.3-1.4	✓	✓	✓	✓	✓	✓	✓	✓					✓			
314-1.9-2	✓	✓	✓				✓			✓	✓	✓				
315-0-0.1	✓	✓	✓				✓		✓							
315-0.6-0.7	✓	✓	✓	✓	✓	✓	✓	✓					✓			
315-0.9-1																✓
316-0.4-0.5	✓	✓	✓				✓		✓							
317-0-0.1	✓	✓	✓				✓		✓							
318-0-0.1	✓	✓	✓				✓		✓							
319-0.2-0.3	✓	✓	✓				✓		✓							
319-0.4-0.5	✓	✓	✓				✓		✓							
319-1.3-1.4	✓	✓	✓				✓									
319-1.9-2	✓	✓	✓				✓		✓							
319-2.4-2.5	✓	✓	✓	✓	✓	✓	✓	✓	✓							

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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	Clay 50-120g	Asbestos ID - soils NEPM	Triazine Herbicides in Soil	Asbestos ID - materials	On Hold
319-2.9-3																✓
320-0.4-0.5	✓	✓	✓				✓		✓							
320-0.9-1	✓	✓	✓	✓	✓	✓	✓	✓					✓			
321-0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓							
322-0-0.1	✓	✓	✓				✓		✓					✓		
323-0.4-0.5																✓
323-0.9-1	✓	✓	✓				✓		✓							
323-1.9-2	✓	✓	✓	✓	✓	✓	✓	✓	✓							
323-2.4-2.5	✓	✓	✓				✓		✓							
324-0.9-1	✓	✓	✓				✓		✓							
324-1.1-1.2	✓	✓	✓	✓	✓	✓	✓	✓	✓							
324-1.9-2																✓
324-2.3-2.4																✓
235-0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓							
326-0-0.1	✓	✓	✓				✓		✓							
326-0.3-0.4	✓	✓	✓				✓			✓	✓	✓				
BD7/20210501	✓	✓	✓				✓									
BD8/20210501	✓	✓	✓	✓	✓	✓	✓	✓								
314-A1															✓	
315-A4															✓	
320-A7															✓	
313-A9															✓	
302-0.1-0.2																✓
303-0.4-0.5																✓
305-0.6-0.7																✓
306-0.6-0.7																✓
307-0.6-0.7																✓
308-0.6-0.7																✓
309-0.7-0.8																✓
310-0.5-0.6																✓
311-0.2-0.3																✓
311-0.6-0.7																✓

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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	Clay 50-120g	Asbestos ID - soils NEPM	Triazine Herbicides in Soil	Asbestos ID - materials	On Hold
312-0.1-0.2																✓
312-1.0-1.1																✓
312-1.5-1.6																✓
312-1.6-1.7																✓
313-0.6-0.7																✓
313-1.4-1.5																✓
314-0-0.1																✓
314-0.9-1.0																✓
314-1.4-1.5																✓
315-0.4-0.5																✓
315-1.4-1.5																✓
316-0-0.1																✓
316-0.5-0.6																✓
317-0.4-0.5																✓
318-0.4-0.5																✓
319-0-0.1																✓
319-1.4-1.5																✓
319-2.7-2.8																✓
320-0-0.1																✓
320-1.4-1.5																✓
321-0.5-0.6																✓
321-0.9-1.0																✓
322-0.2-0.4																✓
323-0-0.1																✓
324-0.2-0.3																✓
323-1.4-1.5																✓
324-0-0.1																✓
324-0.4-0.5																✓
325-0-0.1																✓
325-0.8-0.9																✓
BD1																✓
BD2																✓

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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	Clay 50-120g	Asbestos ID - soils NEPM	Triazine Herbicides in Soil	Asbestos ID - materials	On Hold
BD3																✓
BD5																✓
BD6																✓
331-0-0.1																✓
TP31-0.8-0.9																✓
TS																✓
TB																✓

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 268120-A

Client Details

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

Sample Details

Your Reference	**86976.01, Carlingford**
Number of Samples	additional analyses for 4 soils
Date samples received	03/05/2021
Date completed instructions received	05/05/2021

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	07/05/2021
Date of Issue	07/05/2021

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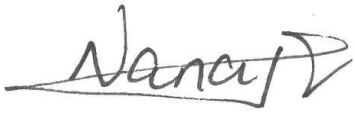
Results Approved By
Hannah Nguyen, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

Metals in TCLP USEPA1311		
Our Reference		268120-A-34
Your Reference	UNITS	320
Depth		0.4-0.5
Date Sampled		01/05/2021
Type of sample		Soil
Date extracted	-	07/05/2021
Date analysed	-	07/05/2021
pH of soil for fluid# determ.	pH units	6.5
pH of soil TCLP (after HCl)	pH units	1.7
Extraction fluid used	-	1
pH of final Leachate	pH units	4.9
Nickel in TCLP	mg/L	0.06

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.

QUALITY CONTROL: Metals in TCLP USEPA1311					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			07/05/2021	[NT]	[NT]	[NT]	[NT]	07/05/2021	[NT]
Date analysed	-			07/05/2021	[NT]	[NT]	[NT]	[NT]	07/05/2021	[NT]
Nickel in TCLP	mg/L	0.02	Metals-020 ICP-AES	<0.02	[NT]	[NT]	[NT]	[NT]	96	[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: Simon Song
Sent: Wednesday, 5 May 2021 9:54 AM
To: Lisa Teng; Ken Nguyen; Ming To
Subject: RE: PRELIM Results for Registration 268120 86976.01, Carlingford

Follow Up Flag: Follow up
Flag Status: Flagged

Ref: 268120-A
TAT: 2 days
Due: 07/05/2021
MT

No problem

Kind Regards,

Simon Song | Senior Customer Service | Envirolab Services

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Samples will be analysed per our T&C's.

From: Lisa Teng <Lisa.Teng@douglaspartners.com.au>
Sent: Wednesday, 5 May 2021 7:01 AM
To: Ken Nguyen <KNguyen@envirolab.com.au>
Cc: Simon Song <SSong@envirolab.com.au>
Subject: RE: PRELIM Results for Registration 268120 86976.01, Carlingford

Hi,

Could we please schedule the following additional test also on 2 day TAT for TCLP but ASAP would be super appreciated!!

(34) 320 / 0.4-0.5 Nickel TCLP
(59) BD8/20210501 Zinc TCLP
(20) 314/1.3-1.4 Nickel TCLP
(37) 322/0-0.1 Nickel TCLP

Thanks,

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SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Pty Ltd
Attention	Lisa Teng

Sample Login Details

Your reference	86976.01, Carlingford
Envirolab Reference	268120-A
Date Sample Received	03/05/2021
Date Instructions Received	05/05/2021
Date Results Expected to be Reported	07/05/2021

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	additional analyses for 4 soils
Turnaround Time Requested	2 days
Temperature on Receipt (°C)	10.0
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

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:

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Sample ID	pH of soil for fluid#determ.	pH of soil TCLP (after HCl)	Extraction fluid used	pH of final Leachate	Nickel in TCLP	Zinc in TCLP	On Hold
301-0.1-0.2							✓
302-0.4-0.5							✓
302-0.7-0.8							✓
303-0.1-0.2							✓
304-0.1-0.2							✓
305-0.1-0.2							✓
306-0.1-0.2							✓
307-0.1-0.2							✓
308-0.1-0.2							✓
309-0.2-0.3							✓
309-1-1.1							✓
310-0.2-0.3							✓
310-0.8-0.9							✓
311-0.4-0.5							✓
312-0.7-0.8							✓
312-1.3-1.4							✓
313-0.1-0.2							✓
313-0.9-1							✓
314-0.4-0.5							✓
314-1.3-1.4	✓	✓	✓	✓	✓		
314-1.9-2							✓
315-0-0.1							✓
315-0.6-0.7							✓
315-0.9-1							✓
316-0.4-0.5							✓
317-0-0.1							✓
318-0-0.1							✓
319-0.2-0.3							✓
319-0.4-0.5							✓
319-1.3-1.4							✓
319-1.9-2							✓
319-2.4-2.5							✓

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Sample ID	pH of soil for fluid#determ.	pH of soil TCLP (after HCl)	Extraction fluid used	pH of final Leachate	Nickel in TCLP	Zinc in TCLP	On Hold
319-2.9-3							✓
320-0.4-0.5	✓	✓	✓	✓	✓		
320-0.9-1							✓
321-0.4-0.5							✓
322-0-0.1	✓	✓	✓	✓	✓		
323-0.4-0.5							✓
323-0.9-1							✓
323-1.9-2							✓
323-2.4-2.5							✓
324-0.9-1							✓
324-1.1-1.2							✓
324-1.9-2							✓
324-2.3-2.4							✓
235-0.4-0.5							✓
326-0-0.1							✓
326-0.3-0.4							✓
BD7/20210501							✓
BD8/20210501	✓	✓	✓	✓		✓	
314-A1							✓
315-A4							✓
320-A7							✓
313-A9							✓
302-0.1-0.2							✓
303-0.4-0.5							✓
305-0.6-0.7							✓
306-0.6-0.7							✓
307-0.6-0.7							✓
308-0.6-0.7							✓
309-0.7-0.8							✓
310-0.5-0.6							✓
311-0.2-0.3							✓
311-0.6-0.7							✓

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Sample ID	pH of soil for fluid#determ.	pH of soil TCLP (after HCl)	Extraction fluid used	pH of final Leachate	Nickel in TCLP	Zinc in TCLP	On Hold
312-0.1-0.2							✓
312-1.0-1.1							✓
312-1.5-1.6							✓
312-1.6-1.7							✓
313-0.6-0.7							✓
313-1.4-1.5							✓
314-0-0.1							✓
314-0.9-1.0							✓
314-1.4-1.5							✓
315-0.4-0.5							✓
315-1.4-1.5							✓
316-0-0.1							✓
316-0.5-0.6							✓
317-0.4-0.5							✓
318-0.4-0.5							✓
319-0-0.1							✓
319-1.4-1.5							✓
319-2.7-2.8							✓
320-0-0.1							✓
320-1.4-1.5							✓
321-0.5-0.6							✓
321-0.9-1.0							✓
322-0.2-0.4							✓
323-0-0.1							✓
324-0.2-0.3							✓
323-1.4-1.5							✓
324-0-0.1							✓
324-0.4-0.5							✓
325-0-0.1							✓
325-0.8-0.9							✓
BD1							✓
BD2							✓

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Sample ID	pH of soil for fluid#determ.	pH of soil TCLP (after HCl)	Extraction fluid used	pH of final Leachate	Nickel in TCLP	Zinc in TCLP	On Hold
BD3							✓
BD5							✓
BD6							✓
331-0-0.1							✓
TP31-0.8-0.9							✓
TS							✓
TB							✓
310 - [TRIPLICATE]-0.2-0.3							✓
319 - [TRIPLICATE]-2.4-2.5							✓
323 - [TRIPLICATE]-1.9-2							✓

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.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2116376**	Page	: 1 of 6
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: LISA TENG	Contact	: Sepan Mahamad
Address	: 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 2114	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: 86976.01	Date Samples Received	: 03-May-2021 14:50
Order number	: ----	Date Analysis Commenced	: 04-May-2021
C-O-C number	: ----	Issue Date	: 05-May-2021 17:53
Sampler	: ----		
Site	: Carlingford		
Quote number	: EN/222		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BD3/20210501 Received as "BD4/20210501"	BD9/20210501	----	----	----
			Sampling date / time	01-May-2021 00:00	01-May-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2116376-001	ES2116376-002	--------	--------	--------
				Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**14.4**	**19.5**	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg	**10**	**5**	----	----	----
Copper	7440-50-8	5	mg/kg	**11**	**13**	----	----	----
Lead	7439-92-1	5	mg/kg	**16**	**28**	----	----	----
Nickel	7440-02-0	2	mg/kg	**5**	<2	----	----	----
Zinc	7440-66-6	5	mg/kg	**23**	<5	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	----	----	----
EP080/071: Total Petroleum Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BD3/20210501 Received as "BD4/20210501"	BD9/20210501	----	----	----
				Sampling date / time	01-May-2021 00:00	01-May-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES2116376-001	ES2116376-002	--------	--------	--------
					Result	Result	----	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	----	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	----	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	----	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**83.7**	**80.8**	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**82.1**	**80.5**	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**95.8**	**93.3**	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**86.4**	**83.2**	----	----	----
Anthracene-d10	1719-06-8	0.5	%		**105**	**103**	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		**95.8**	**98.1**	----	----	----
EP080S: TPH(V)/BTEX Surrogates									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BD3/20210501 Received as "BD4/20210501"	BD9/20210501	----	----	----
				Sampling date / time	01-May-2021 00:00	01-May-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES2116376-001	ES2116376-002	--------	--------	--------
					Result	Result	----	----	----
EP080S: TPH(V)/BTEX Surrogates - Continued									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**87.3**	**96.3**	**----**	**----**	**----**
Toluene-D8	2037-26-5	0.2	%		**94.7**	**99.7**	**----**	**----**	**----**
4-Bromofluorobenzene	460-00-4	0.2	%		**96.5**	**102**	**----**	**----**	**----**

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

QUALITY CONTROL REPORT

Work Order	: **ES2116376**	Page	: 1 of 7
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: LISA TENG	Contact	: Sepan Mahamad
Address	: 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 2114	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: 86976.01	Date Samples Received	: 03-May-2021
Order number	: ----	Date Analysis Commenced	: 04-May-2021
C-O-C number	: ----	Issue Date	: 05-May-2021
Sampler	: ----		
Site	: Carlingford		
Quote number	: EN/222		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3657887)									
ES2115858-006	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	8	8	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	3	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	7	8	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	10	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	16	17	7.06	No Limit
ES2115931-015	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	8	9	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	10	9	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	15	14	8.86	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	50	57	13.8	0% - 50%
		EG005T: Lead	7439-92-1	5	mg/kg	116	123	6.11	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	980	1000	2.19	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3657892)									
ES2115858-008	Anonymous	EA055: Moisture Content	----	0.1	%	9.5	9.8	3.38	No Limit
ES2115932-005	Anonymous	EA055: Moisture Content	----	0.1	%	8.8	8.5	2.35	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3657888)									
ES2115931-015	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3656088)									
ES2116376-001	BD3/20210501 Received as "BD4/20210501"	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3656088) - continued									
ES2116376-001	BD3/20210501 Received as "BD4/20210501"	EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3656089)									
ES2116376-001	BD3/20210501 Received as "BD4/20210501"	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3656262)									
ES2116376-001	BD3/20210501 Received as "BD4/20210501"	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3656089)									
ES2116376-001	BD3/20210501 Received as "BD4/20210501"	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3656262)									
ES2116376-001	BD3/20210501 Received as "BD4/20210501"	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080: BTEXN (QC Lot: 3656262)									
ES2116376-001	BD3/20210501 Received as "BD4/20210501"	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080: BTEXN (QC Lot: 3656262) - continued									
ES2116376-001	BD3/20210501 Received as "BD4/20210501"	EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3657887)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	93.3	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	90.0	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	95.3	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	97.0	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	95.6	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	88.1	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	88.7	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3657888)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.073 mg/kg	129	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3656088)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	92.0	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	85.7	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	82.4	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	86.8	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	87.5	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	88.6	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	89.4	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	91.9	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	84.2	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	85.3	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	82.8	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	92.4	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	81.4	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	72.8	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	70.5	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	69.9	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3656089)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	98.5	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	96.2	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	90.9	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3656262)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	104	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3656089)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3656089) - continued								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	97.3	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	94.6	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	79.9	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3656262)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	104	68.4	128
EP080: BTEXN (QCLot: 3656262)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	98.8	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	102	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	98.4	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	102	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	98.0	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	107	63.0	119

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3657887)							
ES2115931-015	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	95.9	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	95.2	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	98.1	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	102	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	98.0	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	97.5	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	98.0	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3657888)							
ES2115931-015	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	82.2	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3656088)							
ES2116376-001	BD3/20210501 Received as "BD4/20210501"	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	91.3	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	101	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3656089)							
ES2116376-001	BD3/20210501 Received as "BD4/20210501"	EP071: C10 - C14 Fraction	----	523 mg/kg	81.7	73.0	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	110	53.0	131

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3656089) - continued							
ES2116376-001	BD3/20210501 Received as "BD4/20210501"	EP071: C29 - C36 Fraction	----	1714 mg/kg	108	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3656262)							
ES2116376-001	BD3/20210501 Received as "BD4/20210501"	EP080: C6 - C9 Fraction	----	32.5 mg/kg	95.7	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3656089)							
ES2116376-001	BD3/20210501 Received as "BD4/20210501"	EP071: >C10 - C16 Fraction	----	860 mg/kg	93.7	73.0	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	106	53.0	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	69.4	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3656262)							
ES2116376-001	BD3/20210501 Received as "BD4/20210501"	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	92.8	70.0	130
EP080: BTEXN (QCLot: 3656262)							
ES2116376-001	BD3/20210501 Received as "BD4/20210501"	EP080: Benzene	71-43-2	2.5 mg/kg	80.0	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	85.2	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	81.6	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	86.5	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	81.4	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	78.4	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2116376**	Page	: 1 of 4
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: LISA TENG	Telephone	: +61 2 8784 8555
Project	: 86976.01	Date Samples Received	: 03-May-2021
Site	: Carlingford	Issue Date	: 05-May-2021
Sampler	: ----	No. of samples received	: 2
Order number	: ----	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
BD3/20210501 - Received as "BD4/20210501", BD9/20210501	**01-May-2021**	**----**	----	----	**04-May-2021**	15-May-2021	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
BD3/20210501 - Received as "BD4/20210501", BD9/20210501	**01-May-2021**	**04-May-2021**	28-Oct-2021	✓	**04-May-2021**	28-Oct-2021	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
BD3/20210501 - Received as "BD4/20210501", BD9/20210501	**01-May-2021**	**04-May-2021**	29-May-2021	✓	**05-May-2021**	29-May-2021	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
BD3/20210501 - Received as "BD4/20210501", BD9/20210501	**01-May-2021**	**04-May-2021**	15-May-2021	✓	**04-May-2021**	13-Jun-2021	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
BD3/20210501 - Received as "BD4/20210501", BD9/20210501	**01-May-2021**	**04-May-2021**	15-May-2021	✓	**04-May-2021**	15-May-2021	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
BD3/20210501 - Received as "BD4/20210501", BD9/20210501	**01-May-2021**	**04-May-2021**	15-May-2021	✓	**04-May-2021**	15-May-2021	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
BD3/20210501 - Received as "BD4/20210501", BD9/20210501	**01-May-2021**	**04-May-2021**	15-May-2021	✓	**04-May-2021**	15-May-2021	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2116376**

Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: LISA TENG	Contact	: Sepan Mahamad
Address	: 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 2114	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: lisa.teng@douglaspartners.com.au	E-mail	: Sepan.Mahamad@ALSGlobal.com
Telephone	: ----	Telephone	: +61 2 8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: 86976.01	Page	: 1 of 2
Order number	: ----	Quote number	: EM2017DOUPAR0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Carlingford		
Sampler	:		

Dates

Date Samples Received	: 03-May-2021 14:50	Issue Date	: 03-May-2021
Client Requested Due Date	: 04-May-2021	Scheduled Reporting Date	: **05-May-2021**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 1.8' C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

ES2116376-001 : [01-May-2021] : BD3/20210501 - Received as "BD4/20210501"

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES2116376-001	01-May-2021 00:00	BD3/20210501 Receiv...	✓	✓
ES2116376-002	01-May-2021 00:00	BD9/20210501	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE INVOICES

- A4 - AU Tax Invoice (INV)	Email	apinvoices@douglaspartners.com.au

LISA TENG

- *AU Certificate of Analysis - NATA (COA)	Email	lisa.teng@douglaspartners.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	lisa.teng@douglaspartners.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	lisa.teng@douglaspartners.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	lisa.teng@douglaspartners.com.au
- Chain of Custody (CoC) (COC)	Email	lisa.teng@douglaspartners.com.au
- EDI Format - ESDAT (ESDAT)	Email	lisa.teng@douglaspartners.com.au
- EDI Format - XTab (XTAB)	Email	lisa.teng@douglaspartners.com.au

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	86976.01	**Suburb:**	Carlingford	**To:**	*ALS*
Project Manager:	Lisa Teng	**Order Number:**		**Sampler:**	*277-289 Woodpark Road, Smithfield*
Email:	Lisa.Teng@douglaspartners.com.au			**Attn:**	*Sample Receipt*
Turnaround time:	☐ Standard ☐ 72 hour ☐ 48 hour ☑ 24 hour ☐ Same day			**Contact:**	alsenviro.sydney@alsglobal.com
Prior Storage:	☑ Fridge ☐ Freezer ☐ Shelf	**Do samples contain 'potential' HBM?**	☐ No ☐ Yes (If YES, then handle, transport and store in accordance with FPM HAZID)		

Lab ID	Sample ID: Location / Other ID	Depth From	Depth To	Date Sampled	Sample Type: S - soil W - water	Container Type: G - glass P - plastic	Analytes: Heavy metals	TRH	BTEX	PAH								Notes/ Preservation/ Additional Requirements
1	BD3/20210501			1/05/21	S	G	x	x	x	x								
2	BD9/20210501			1/05/21	S	G	x	x	x	x								
	#1 Received as = BD4/20210501																	

Environmental Division
Sydney
Work Order Reference
ES2116376

Telephone : +61-2-8784 8555

Metals to analyse:			**LAB RECEIPT**
Number of samples in container:		**Transported to laboratory by:**	**Lab Ref. No:**
Send results to:	Douglas Partners Pty Ltd		**Received by:** SAZ
Address:	96 Hermitage Road, West Ryde NSW 211	**Phone:** (02) 9809 0666	**Date & Time:** 3/5/21 2:50pm
Relinquished by:		**Date:** **Signed:**	**Signed:** SAZ