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Report on
Supplementary Detailed Site Investigation
(Contamination)

Proposed School
Lot 100, DP1261496 Maitland Street, Muswellbrook
NSW

Prepared for
Pacific Brook Christian School Ltd

Project 91601.03
July 2024

Douglas Partners
Geotechnics / Environment / Groundwater

Document History

Document details

Project No.	91601.03	Document No.	R.002.Rev8
Document title	Report on Supplementary Detailed Site Investigation (Contamination) Proposed School		
Site address	Lot 100, DP1261496 Maitland Street, Muswellbrook NSW		
Report prepared for	Pacific Brook Christian School Ltd		
File name	91601.03.R.002.Rev8. SDSI.docx		

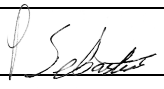
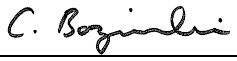
Document status and review

Status	Prepared by	Reviewed by	Date issued
Revision 0	Paulo Sebastian	Chris Bozinovski	12 May 2020
Revision 1	Paulo Sebastian	Chris Bozinovski	10 June 2020
Revision 2	Paulo Sebastian	Chris Bozinovski	25 August 2020
Revision 3	Paulo Sebastian	Chris Bozinovski	13 July 2021
Revision 4	Paulo Sebastian	Chris Bozinovski	23 September 2021
Revision 5	Paulo Sebastian	Chris Bozinovski	24 May 2024
Revision 6	Paulo Sebastian	Chris Bozinovski	11 June 2024
Revision 7	Paulo Sebastian	Chris Bozinovski	25 June 2024
Revision 8	Paulo Sebastian	Chris Bozinovski	23 July 2024

Distribution of copies

Status	Electronic	Paper	Issued to
Revision 0	1	0	Chris Baldry, Pacific Brook Christian School Ltd
Revision 1	1	0	Chris Baldry, Pacific Brook Christian School Ltd
Revision 2	1	0	Chris Baldry, Pacific Brook Christian School Ltd
Revision 3	1	0	Chris Baldry, Pacific Brook Christian School Ltd
Revision 4	1	0	Chris Baldry, Pacific Brook Christian School Ltd
Revision 5	1	0	Chris Baldry, Pacific Brook Christian School Ltd
Revision 6	1	0	Chris Baldry, Pacific Brook Christian School Ltd
Revision 7	1	0	Chris Baldry, Pacific Brook Christian School Ltd
Revision 8	1	0	Chris Baldry, Pacific Brook Christian School 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.

	Signature	Date
Author		23 July 2024
Reviewer		23 July 2024

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Report on Supplementary Detailed Site Investigation (Contamination) Proposed School
Lot 100, DP1261496 Maitland Street, Muswellbrook NSW

1. Introduction

This report presents the results of a supplementary detailed site investigation (DSI) for contamination undertaken in May 2020 at Lot 100, DP1261496 Maitland Street, Muswellbrook NSW. The investigation was commissioned by Chris Baldry on behalf of Pacific Brook Christian School Ltd and was undertaken with reference to Douglas Partners Pty Ltd (DP) proposal NCL200113 dated 3 April 2020.

It is understood that the proposed development on the site will comprise a school facility (primary and secondary school).

The site has undergone a preliminary contamination assessment (PCA) by JK Environments (JK) in April 2019 and a DSI by DP in July 2019. The DSI identified localised PAH impacts within the site associated with a buried asphaltic layer.

The objective of the supplementary assessment was to identify existing data gaps in relation to site contamination issues and to confirm site remediation requirements for the proposed school development.

It is noted that a geotechnical assessment was also conducted by DP and has been reported separately.

The supplementary assessment was conducted with reference to the Auditor approved Sampling, Analysis and Quality Plan (SAQP) (DP 2020) and generally comprised the following:

- Brief review of the previous investigations;
- Site inspection to assess current site conditions;
- Mark out and service locating at proposed test locations;
- Excavation of 16 test pits across the site to supplement the DSI;
- Inspection, surface and near surface sampling surrounding the ten existing / former buildings across the site;
- Inspection and sampling within the seven stockpiles across the site;
- Laboratory testing of selected soil samples for a range of potential organic and inorganic contaminants;
- Preparation of this reporting presenting the results of the assessment.

The investigation was undertaken with reference to NEPM (2013) and NSW EPA (2011), and the Auditor approved SAQP (DP 2020).

2. Site Description

The site is triangular in shape, with a northwest/southeast alignment and has an area of 2.432 ha. The site is bound by Muswellbrook Golf Course along the north eastern boundary, Maitland Street along the south western boundary and residential properties to the south eastern boundary (see below – Aerial image of site boundary). The site address is 72-74 Maitland Street and is legally described as Lot 100 in Deposited Plan (DP) 1261496 (see below – Site Context).

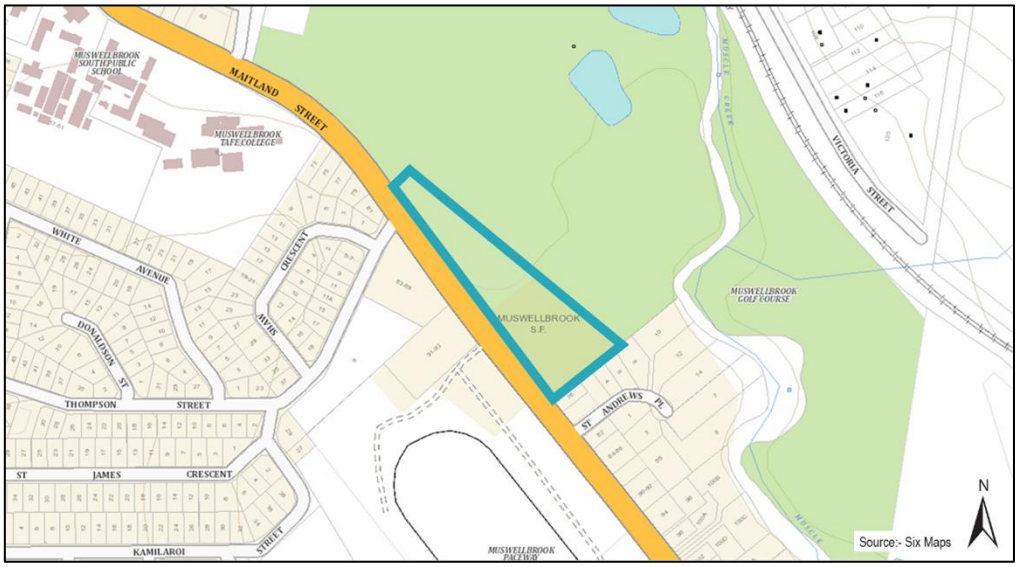
The site is generally level with a slight slope to a watercourse at the north west boundary. This watercourse flows northeast into the adjoining golf course and on to Muscle Creek via a series of dams on the golf course. Muscle Creek flows west into the Hunter River which at its closest is 1.3 km north-west of the site. Stormwater management on site is by overland flow.

72-74 Maitland Street was previously used for forestry plantation purposes and is mapped as Muswellbrook State Forest. The site is no longer used for this purpose and currently sits as an empty and underutilised site.

The main vehicular access to the site is from Maitland Street, as well as pedestrian access. Existing vehicular parking on site includes open air at grade parking spaces facing Maitland Street.

In terms of travel, Muswellbrook is approximately three (3) hours from Sydney, three hours (3) from Dubbo, two (2) hours from Tamworth and 90 minutes from Newcastle.

Aerial Image of Site Boundary



Site Context

At the time of the investigation the site was vacant and generally comprised several empty buildings in connection with the previous site use (plant nursery), gravel and asphalt paths, gravel garden beds and grass covering.

The site is bound by Maitland Street to the south-west, residential developments immediately to the south east with a service station located further to the south east (approximately 60 m), a golf course to the west and north.

The site is zoned R1 General Residential and is within Muswellbrook Shire Council.

Refer to Drawing 1 – Test Location Plan in Appendix D for site features.

Proposed Development

The proposed development is for the establishment of a new K-12 school (Pacific Brook Christian School) on the subject site. The proposed development will comprise site preparation and remediation, tree removal, construction of new school buildings, covered outdoor learning area, covered walkways, car parking, landscaping and associated works. The school will accommodate 140 students and 16 staff.

3. Geology and Hydrogeology

Reference to the 1:250 000 Geology geodatabase indicates that the majority of the site is underlain by Quaternary alluvium deposits which typically comprise gravel, sand, silt and clay and the north western portion is underlain by the Branxton Formation typically comprising conglomerate, sandstone, siltstone.

The regional groundwater flow regime is believed to be to the north and north-west towards Muscle Creek (located approximately 100 m north east of the site) and is considered to be the nearest sensitive receptor. The depth to the water table is likely to be <5 m based on site topography and geology. It should be noted that groundwater levels are affected by climatic conditions and soil permeability and will therefore vary with time.

Reference to the Acid Sulphate Soil Risk Map, prepared by the Department of Land and Water Conservation (DLWC) indicates the site is not mapped within an area known to comprise acid sulfate soils.

4. Background

4.1 Preliminary Contamination Assessment

A PCA was undertaken by JK in April 2019 (JK, 2019) and comprised a site history review, drilling of 20 boreholes, sampling and laboratory testing. The results of the investigation identified the following:

- Fill materials were identified in all bores from 0.1 m to 0.8 m depth which comprised a mixture of clayey silt, sandy gravel and gravel materials;
- Natural materials were encountered in all bores beneath the filling and typically comprised silty clay materials;
- Groundwater was not encountered during the previous investigation however minor seepage was encountered in the southern portion of the site at a depth of 0.8 m which may have been attributed to site infrastructure (ie site irrigation) as opposed to natural groundwater;
- It was noted that no odours or staining were observed in the filling or natural materials during the investigation;
- Results of laboratory testing indicated minor exceedances of PAHs and hydrocarbons above human health and ecological criteria in regard to the proposed landuse.

JK indicated that the environmental / ecological risks associated with the identified hydrocarbon concentrations were negligible.

JK concluded that “the site can be made suitable for the proposed primary school or secondary school development subject to further investigation, risk assessment, and (if required) remediation / validation”.

The PCA (JK, 2019) also outlined the following data gaps:

- The sampling density was approximately 57% of the minimum sampling density recommended for hotspot identification, as outlined in the NSW EPA Sampling Design Guidelines (EPA, 1995) for a site area of approximately 25 000 m^2. A minimum of 15 additional sampling locations would be required to meet the guidelines for a Stage 2 detailed site investigation (DSI). JK recommended that further investigation is undertaken from test pits to provide a better visual assessment of the soil;

- Groundwater sampling was outside the scope of the preliminary assessment. The potential for on-site activities to have resulted in significant groundwater contamination is considered to be relatively low (based on the site observations and soil analysis results). However, an investigation will be required to assess the potential for contamination impacts associated with the service station to the south-east of the site;
- Chemical storage within the Hazchem sheds has the potential to leach through concrete slabs through historical leaks or spills. Additional sampling would be required around the edges of building slabs and within the building footprint to better characterise these areas; and
- The potential presence of hazardous building materials within the existing buildings.

4.2 Detailed Site Investigation (Contamination)

The DSI conducted by DP in July 2019 (DP, 2019a) (updated July 2021) identified the following:

- Presence of shallow filling within the majority of test pits / bores;
- Presence of ash within the upper fill materials in Pits 103, 107 and 111;
- Presence of asphalt lenses in Pit 106 exceeding landuse criteria;
- Fill materials generally met the criteria for classification as 'General Solid Waste' (GSW) based on total concentrations with reference to NSW EPA (2014). It is noted leachability testing was not conducted on the samples that exceeded GSW to confirm waste classification. Experience with similar materials indicate such contaminants generally have a low propensity to leach. Therefore, classification as GSW is considered likely, however should be confirmed with additional testing (refer to Section 9);
- Elevated PAH associated with asphalt lenses within the upper fill materials of the gravel path (Pit 106). This may be associated with a former asphalt seal layer within the path;
- Testing of localised fibro fragments encountered onsite and their immediately surrounding soils indicated the absence of asbestos containing materials (ACM);
- General absence of impacts from the nearby petrol station to groundwater quality along the south-east site boundary.

The extent of PAH impact had not been confirmed, however, it was likely to be associated with the gravel path within the site.

4.3 Preliminary Auditor Advice

The following data-gaps were identified by the Auditor in an email dated 23 January 2020 (Ramboll, 2020) following a brief inspection on 9 January 2020:

1. Existing site buildings:
    - Potential for soil contamination by lead, asbestos and organochlorine pesticides (OCPs) around the current buildings due to the weathering of lead paint and asbestos containing material (ACM) used in building construction and spraying of pesticides;

- Most buildings were in a dilapidated state with peeling paint and fragments of fibre board visible on the ground around the buildings;
- The hazardous material assessment report (DP, 2019b) identified lead paint and ACM in buildings 1, 5, 6, 8 and 9, hence assessment of the potential contamination of near surface soils around these buildings for lead and asbestos is required (refer to Appendix D plans for building IDs);
- The surface soils around all buildings should be assessed for OCPs.

2. Various soil stockpiles and earth mounds across the site:
   - These stockpiles should be assessed for potential contamination (including ACM) to confirm suitability to remain on site or waste classification purposes for disposal.
3. Elevated PAH concentrations:
   - Determine the source of the elevated PAH concentrations reported in shallow soils in eastern portion of site (Pit 106) during previous investigation;
   - Delineate the extent of the contamination;
   - Assess remediation requirements for the intended landuse.
4. Soils beneath building footprints and underground concrete tanks (if removed):
   - Assessment of soil contamination following demolition of structures / concrete tank;
   - This could be completed as a visual assessment with targeted soil sampling if observations indicate any potential sources of contamination.

The Auditor recommended that an environmental consultant review the works to date and develop a sampling and analysis plan for additional investigations to address data gaps and determine the extent of remediation (if any) required.

In summary, the Auditor recommended additional investigations as follows:

- Additional testing for lead, asbestos and OCPs around the current buildings;
- Additional testing of various soil stockpiles and earth mounds across the site;
- Additional testing to delineate PAH impacts and remediation requirements (if any);
- Assessment of soils beneath building footprints and underground concrete tanks (following demolition).

The DP SAQP (2020) was prepared to address data-gaps and confirm site contamination conditions.

5. Site Condition

Site conditions observed during the field work for the current supplementary assessment on 7 April 2020 were generally consistent with the findings observed during the site inspection in July 2019.

It is understood that the site boundary extends approximately 1 m beyond the existing wire mesh fence along the eastern site boundary. This additional 1 m strip of land comprised the rear boundaries of several residential back yards. This area was inspected as part of the current assessment and was observed to comprise residential grass covered lawns, trace scrap metal and a metal sheet building as shown in the Figures 1 to 3 in Appendix D.

An inspection of the asphalt access track confirmed the sealed track surrounded the site structures in the central eastern portion of the site and linked in with the driveway entrance and exit in the central southern and south eastern portion of the site respectively. It is noted the access track appears to be buried in the vicinity north of Building 5 which was confirmed in the previous investigation by DP in 2019. Figures 4 to 7 in Appendix D show the general condition of the access track.

The stockpiles observed on site were also inspected and sampled, Figures 6 to 14 in Appendix D show the stockpiles 301, 301A and 302 to 307.

A detailed inspection of the existing building surrounds was also conducted and are summarised in Table 2 in Section 7. It is noted that six fibro fragments (potential asbestos containing materials (ACM) (generally in good condition) were observed at the surface in the vicinity of existing buildings. A summary of the location of the fibro materials observed and sampled are as follows:

- West of Building 5;
- South and east of Building 6;
- North of Building 8; and
- North of Building 9.

The typical conditions surrounding each building and the fibro fragments are shown in Figures 15 to 34 in Appendix D.

6. Conceptual Site Model

A Conceptual Site Model (CSM) has been prepared for the site with reference to the National Environment Protection (Assessment of Site Contamination) Measure 1999 (Amendment Measure 2013) Schedule B2. The CSM identifies potential contaminant sources and contaminants of concern, contaminant release mechanisms, exposure pathways and potential receptors. The CSM is presented in Table 1 below.

Table 1: Conceptual Site Model

Known and Potential Primary Sources	Primary Release Mechanism	Secondary Release Mechanism	Potential Impacted Media	Contaminants of Concern	Exposure Pathway	Potential Receptors	
						Current	Future
Filling observed within the site & opportunistic dumping (stockpiles)	Placement/ storage of filling on-site or opportunistic dumping	Long-term leaching of contaminants via runoff, rain water infiltration / percolation	Soil, groundwater, surface water	TRH, BTEX, PAH, Metals, Pesticides, PCB, Asbestos	Dermal contact, inhalation (dust/vapours), ingestion	Site workers, maintenance workers, consultants, trespassers, surface water bodies, groundwater	Students / pupils and staff, Site workers, members public, maintenance workers, construction workers, consultants, trespassers, surface water bodies, groundwater
Hazchem buildings	Spills and leaks, from storage/use of fuels, oils, paints, pesticides etc.	Long-term leaching of contaminants via runoff, rain water infiltration / percolation, through soil or cracks/joints in concrete	Soil, groundwater, surface water	TRH, BTEX, PAH, Metals, Pesticides, PCB,	Dermal contact, inhalation (dust/vapours), ingestion		
Former structures	Demolition of former structures	Long-term leaching of contaminants via runoff, rain water infiltration / percolation or disturbance via traffic/excavation	Soil, groundwater, surface water	Asbestos, PCB, Metals	Dermal contact, inhalation (dust), ingestion		
Buried asphalt lens (former path)	Placement on-site	Long-term leaching of contaminants via runoff, rain water infiltration / percolation	Soil, groundwater, surface water	TRH, PAH, Phenols	Dermal contact, ingestion		

7. Field Work

7.1 Sampling Rationale

The following sampling strategy was conducted for the supplementary investigation prior to the demolition of site structures (ie pre-demolition assessment):

- **Existing Buildings:**
  - Visual inspection at the perimeter of all existing buildings to assess for the presence of hazardous building materials or other evidence of potential contamination (Buildings 1 to 10 – refer to Drawing 1 attached);
  - Collection of near surface soil samples using hand tools from the perimeter of each existing building (four per building – one from each side);
  - Collection of potential ACM fragments where observed from the perimeter of existing buildings;
  - Analysis of all soil samples for OCP;
  - Analysis of soil samples for lead and asbestos from Buildings 1, 5, 6, 8 and 9;
  - Analysis of possible ACM fragments for asbestos identification.
- **Soil Stockpiles and Earth Mounds across the Site:**
  - Visual inspection and identification of soil stockpiles / mounds within the site to assess for evidence of potential contamination;
  - Excavation of test pits within mounds to assist with visual inspection and soil sample collection;
  - Collection of representative soil samples from stockpiles;
  - Analysis of representative soil samples for TRH, BTEX, PAH, Phenol, metals, OCP, OPP, PCB, asbestos ID (minimum 1 per mound or 1/25m^3);
  - Analysis of possible ACM fragments for asbestos identification;
  - The number of samples collected and tested will be assessed during field work in order to characterise the materials present (ie will depend on the condition and variability of materials observed);
  - Leachability (TCLP) testing on selected samples to confirm waste classification (ie materials exceeding landuse criteria).
- **Elevated PAH Concentrations:**
  - Excavation of test pits in the vicinity of TP106 and along the gravel path (ie potential source of PAH impact) to visibly assess the presence and possible extent of PAH impacts;
  - Collection of representative soil samples for PAH, TRH and Phenol analysis;
  - Review of Chromatographs and lab interpretation to assist with assessing the possible origin of PAH impacts;
  - TCLP testing on selected soil samples to confirm waste classification (where required);
  - Distilled water leachability (ASLP) testing on soil samples containing elevated PAH (where encountered).

As stated in the SAQP (DP, 2020), post-demolition surface inspections will be conducted over building footprints and the immediate surrounds to confirm site conditions following demolition activities. Demolition should be conducted by a licensed contractor in accordance with statutory and regulatory requirements and include clearance for hazardous building materials. A brief report will be prepared presenting the results of post-demolition inspections, sampling and testing, with comments on requirements (if any) for remediation.

A total of 17 test pits (Pits 401 to 413, 106A and 501 to 503) were excavated and sampled for the assessment; along with the excavation and sampling within seven stockpiles (301 to 307) across the site. The pits were located to address data gaps and assess the lateral extent of potential contamination across the site.

Surface and near surface soils were also sampled (B series samples) across 40 locations adjacent to the 10 existing buildings to assess possible impacts from hazardous building materials and pesticides where required.

Soil samples were selected for analysis on the basis of the likely presence of contamination, based on material type, visual or olfactory evidence of possible contamination (ie odour or staining), proximity to a known source of contamination, and whether generally representative of soil/fill conditions.

7.2 Methods

Field work was conducted on 7 April 2020 and comprised the following:

- Checking for underground services at proposed bore locations by a professional service locator prior to drilling;
- Excavation of 17 test pits to depths of 0.5 m to 3.0 m using a small excavator;
- Excavation of 40 shallow test pits at the perimeter of all existing buildings within the surface and near surface soils using hand tools;
- Logging of the subsurface profile, including visual and olfactory assessment of potential contaminants in soil;
- Screening of soil samples for volatile organic impact with a photo-ionisation detector (PID);

The test locations were set out by an environmental engineer from DP who also logged the subsurface profile in the pits and collected samples for identification and laboratory testing purposes. The approximate locations of the test pits and sampling locations are shown on Drawings 1 and 2, Appendix D.

Samples for environmental purposes were generally collected from the near surface, and at regular depth intervals or changes in strata within each pit. Soil samples were collected directly from within or test pits walls using stainless steel sampling equipment and / or disposable gloves. Care was taken to remove any extraneous material deposited on the sample.

The process of obtaining samples and their transportation, storage and delivery to laboratories for analysis was documented on DP standard Chain of Custody (C-O-C) forms. Copies of completed forms are contained in Appendix C.

7.3 Results

The subsurface conditions are presented in detail in the test pit logs, Appendix A. These should be read in conjunction with the general notes preceding them, which explain definitions of the classification methods and descriptive terms.

7.3.1 Test Pits (assessment of asphaltic materials)

FILLING / ASPHALT:	Asphalt wearing course approximately 0.05 m thick on the surface of majority of the test pits and asphaltic lenses at depth (between 0.15m and 0.3 m) in Pits 406, 407, 408, 409 and 106A.
FILLING:	Encountered in majority of the pits with the exception of Pits 501 to 503. The filling generally comprised a gravelly sand sub-base filling and silty sand filling to 0.2 m. Ash and coal reject gravel filling was encountered in all the pits with the exception of Pits 406, 407, 408, 413 and 501 to 503.
SILTY CLAY/CLAYEY SILT:	Encountered in all pits from 0.1 m to 0.5 m to termination depth.

The subsurface conditions encountered were generally commensurate with those found in JK (2019) and DP (2019).

Groundwater was not encountered during excavation of the test pits. It should be noted that groundwater levels are affected by factors such as climatic conditions, soil permeability and tidal influences and will therefore vary with time.

7.3.2 Stockpiles

The stockpiles generally comprised intermixed silty sand, clay and gravel. Stockpile 306 comprised some asphalt fragments, timber and organics, and Stockpiles 301 and 301A comprised abundant vegetation. Building materials such as brick, concrete, tile, ceramics, fibro fragments etc were not observed within any of the stockpiles investigated on site and therefore bulk asbestos sieving was not undertaken in the current supplementary assessment.

It is noted that Stockpile 305 comprised woodchip mulch and Stockpile 302 comprised two separate stockpiles of clean quarry gravel and mulch both comprising no soil component and therefore were not sampled or tested.

A brief description and an approximate volume for each stockpile is outlined in Table 2 below.

Photos of the stockpiles are shown in Appendix D attached.

Table 2: Summary of Stockpiles

Stockpile	Approximate Volume	Description
301	9 m^3	Generally comprising brown silty sand and gravel, trace clay and abundant vegetation
301A	9 m^3	Generally comprising brown silty sand and gravel, trace clay and abundant vegetation
302	3 m^3 and 1 m^3	Woodchip mulch and coarse quarry gravels (stockpiles not sampled)
303	11 m^3	Generally comprising brown silty sand and sub-rounded gravel with trace vegetation
304	3 m^3	Generally comprising brown silty sand and sub-rounded gravel
305	1.5 m^3	Woodchip mulch (not sampled)
306	14 m^3	Generally comprising intermixed silty sand and clay, trace asphalt fragments, timber and organics
307	25 m^3	Generally comprising brown sandy clay with fine to course grained sand and gravel and trace vegetation

7.3.3 Building Surrounds

Table 3 below summarises the condition of the surface and near surface soils surrounding each building. Photos of each building are shown attached in Appendix D.

Table 3: Summary of Surface Soil Conditions Surrounding Each Building

Building No.	Soil Description
1 (Residential Dwelling)	Silty sand comprising fine to medium grained, brown, with silt, trace rootlets fine gravels, moist
2 (Timber Shed)	Silty sand comprising fine to medium grained, brown, with silt, trace fine gravels, rootlets, moist
3 (Galvanised Water Tank)	Gravelly sand comprising fine to medium grained, brown, with fine gravels, moist
	Clayey silt comprising low plasticity, brown
4 (Concrete Water Tank)	Clayey silt comprising low plasticity, brown
5 (Potting Shed)	Silty sand and gravelly sand comprising fine to medium grained, pale brown, with silt, moist (fine to medium gravels on surface) (possible filling)
6 (Front Office)	Silty sand comprising fine to medium grained, black, with silt, trace fine to medium gravels, moist (garden bed along southern face) (possible filling)
7 (Shade Cloth Greenhouse)	Silty sand comprising fine to medium grained, brown, with silt, fine to coarse gravels, moist. Trace plastic (possible filling)
8 (Rear Office)	Gravelly sand and silty sand comprising fine to medium grained, black and brown, with fine to medium gravels, silt, moist (possible filling)
9 (Hazchem and Machinery Shed)	Silty sand and gravelly sand comprising fine to medium grained, brown, with silt, trace fine to coarse gravels, moist (possible filling)
10 (Glasshouse)	Silty sand comprising fine to medium grained, brown, with silt, trace fine to medium gravels, roots, moist (possible filling)

7.4 Contaminant Observations

Observations of potential contamination within the test pits are summarised in Table 3 below:

Table 4: Potential Contamination Observations within Test Pits

Potential Contamination Observation	Locations and Depths (m)
Filling[1]	All pits with the exception of Pits 501 to 503
Asphalt surface and subsurface asphalt lenses	All pits with the exception of Pits 501 to 503
Ash and coal reject	Pits 401, 402, 403, 404, 405, 409, 410, 411, 412 and 106A

Notes to Table 4:

1 - Potential presence of a range of contaminants (source unknown)

Observations of potential contamination within the stockpiled samples comprise possible imported filling with all the stockpiles and asphalt fragments within Stockpile 306.

Observations of potential contamination surrounding the existing buildings comprise the following:

- Imported filling surrounding majority of the buildings;
- Fibro fragments (possible ACM)at the surface adjacent to Buildings 5, 6, 8, 9 and 10; and
- Possible paint fragments surrounding Buildings 1, 5, and 8.

There were no obvious indications of gross contamination (ie staining / odours) within the investigated soils (ie no gross staining / odours). There were no indications of building rubble or potential hazardous building materials at the surface or within test pits associated with the identified stockpiled soils.

The results of PID screening on soil samples are shown on the test pit logs in Appendix A. PID screening generally suggested the absence of gross volatile hydrocarbon impact in all samples tested (ie <1 ppm).

8. Data Quality Objectives

8.1 Data Quality Objectives (DQOs)

The Supplementary DSI has been devised broadly in accordance with the seven-step data quality objective (DQO) process, which is provided in Appendix B, Schedule B2 of NEPC (2013). The DQO process is outlined as follows:

Step 1 - State the Problem

The proposed development involves the demolition of existing structures and construction of a new school facility. Previous investigations have identified potential sources of soil contamination associated with the site's history. The 'problem' to be addressed is that the extent and nature of potential contamination on site is not fully understood. The objective of the supplementary investigation is therefore to assess the nature and extent of contamination at the site and make recommendations for

remediation (where required) to render the site suitable for the proposed redevelopment works. Where required, options for the management or disposal of excess soils from site redevelopment will also be provided.

DP's project team included a Principal / Project Manager, field engineers and excavation subcontractor. The decision maker were the DP Principal / Project Manager.

Step 2 - Identify the Decision

Based on the site history, it is considered that the contaminants of concern are various organic and inorganic compounds impacting on soil (refer to the CSM in Section 6). As such, the analysis will focus on those contaminants relevant to the identified media.

The analytical data for soil will be compared to relevant SAC including HIL, HSL, EIL and ESL for an educational facility as per Tables 1A and 1B in Schedule B1, NEPC (2013).

The suitability of the site for the proposed development will be based on a comparison of the analytical results for all contaminants of concern to the adopted SAC. If necessary, results will also be compared to the 95% UCL of the mean concentrations (relevant to soil contamination under certain circumstances).

The following specific decisions will be made, as appropriate:

- What is the conceptual site model (ie sources, receptors, migration pathways, exposure)?
- Do the existing fill materials and/or natural soils pose a potential risk to identified receptors?
- Does the existing groundwater beneath the site pose a potential risk to identified receptors?
- Does the existing soil gas/soil vapour beneath the site pose a potential risk (toxic, explosion or asphyxiation) to identified receptors?
- Is the data sufficient to make a decision regarding the abovementioned risks, the compatibility of the site for the proposed development or are additional investigations required?
- Are there any off-site migration issues that need to be considered?
- What are the waste management requirements for excess soils associated with the development?
- Is the data sufficient to enable the preparation of a Remediation Action Plan (RAP) and/or Environmental Management Plan (EMP) should the data suggest these are required?

Step 3 - Identify the Inputs to the Decision

Inputs into the decisions are as follows:

- Collection and review of site history information including information regarding previous and current activities undertaken on the site and the surrounding areas;
- Review of previous investigations undertaken;
- Regional geology, topography, ASS risk mapping and hydrogeology;
- Soil samples will be collected at targeted locations and analysed for the relevant contaminants of concern;
- Screening for potential volatile organic compounds (ie soil vapour) will be conducted using a PID;

- The lithology of the site as described in the test pit logs and sample descriptions;
- If site conditions suggest additional contaminants of concern, e.g. if the condition of subsurface material encountered whilst drilling encounter particular odours, further analysis may be undertaken;
- Field and laboratory QA/QC data to assess the suitability of the environmental data for the assessment;
- All analysis undertaken at a NATA accredited laboratory; and
- The results will be compared with the SAC discussed below.

Step 4 - Define the Boundary of the Assessment

The study boundary is as shown on Drawing 1, Appendix D and described in Section 2 above.

Step 5 - Develop a Decision Rule

The information obtained during the assessment will be used to characterise the site in terms of contamination issues and risk to human health and/or the environment. The decision rules used in characterising the site will be as follows:

- Laboratory test results for fill/soil will be assessed individually or statistically, if considered appropriate, to determine the 95% UCL of the mean concentration for each analyte or analyte group (of like materials);
- Laboratory test results for targeted locations (and identified 'hot spots') will be assessed individually;
- The adopted SAC will be from NSW EPA endorsed guidelines;
- Where such criteria are not available, other recognised national or international standards will be used;
- The contaminant concentrations in fill / soil should meet the following criteria, or further investigation or remedial action is required if:
    - The concentration of the contaminant is more than 2.5 times the SAC. Any location more than 2.5 times the adopted site criteria is classified as a 'hotspot', requiring further assessment / management; and
    - The calculated 95% UCL for a relevant area and discrete impacted fill/soil stratum (excluding any 'hotspot' concentrations) exceeds the adopted SAC;
    - The standard deviation of the results is greater than 50% of the SAC;
- Further investigation, remediation and/or management will be recommended if the site is found to be contaminated or containing contamination 'hot spots';

Field and laboratory test results will be considered useable for the assessment after evaluation against the following data quality indicators (DQIs):

Table 5: Data Quality Indicators

DQO	Frequency	Data Acceptance Criteria
Completeness		
Field documentation correct	All samples	All samples
Soil bore logs complete and correct	All samples	All samples
Suitably qualified and experience sampler	All samples	All samples
Appropriate lab methods and limits of reporting (LORs)	All samples	All samples
Chain of custodies (COCs) completed appropriately	All samples	All samples
Sample holding times complied with	All samples	All samples
Proposed/critical locations sampled	-	Proposed/critical locations sampled
Comparability		
Consistent standard operating procedures for collection of each sample. Samples should be collected, preserved and handled in a consistent manner	All samples	All samples
Experienced sampler	All samples	All samples
Consistent analytical methods, laboratories and units	All samples	All samples
Representativeness		
Sampling appropriate for media and analytes (appropriate collection, handling and storage)	All samples	All Samples
Samples homogenous	All samples	All Samples
Samples extracted and analysed within recommended holding times	All samples	-
Precision		
Blind duplicates (intra-laboratory duplicates)	1 per 20 samples	30% RPD, then review RPDs >30% would be reviewed in relation to heterogeneity of sample and LOR
Laboratory duplicates	1 per 20 samples	<20% RPD Result > 20 × LOR <50% RPD Result 10-20 × LOR No Limit when RPD Result <10 × LOR
Accuracy		
Surrogate spikes	All organic samples	50-150%
Matrix spikes	1 per 20 samples	70-130% (inorganics) 60-140% (organics)
Laboratory control samples	1 per 20 samples	70-130% (inorganics) 60-140% (organics)
Method blanks	1 per 20 samples	<LOR

Step 6 - Specify Acceptable Limits on Decision Errors

Considering the future site use / development, decision errors for the respective contaminants of concern for fill / soil are:

1. Deciding that the sites fill / soil exceeds the SAC when they truly do not; and
2. Deciding that the sites fill / soils are within the SAC when they are truly not.

Decision errors for the proposed assessment will be minimised and measured by the following:

- Compare new data with available previous investigations to determine the possible range of the parameters of interest;
- The sampling regime will target key strata identified to account for site variability;
- Sample collection and handling techniques will be with reference to DPs Field Procedures Manual;
- Samples will be prepared and analysed by a NATA accredited laboratory with the acceptance limits for laboratory QA/QC parameters based on the laboratory reported acceptance limits and those stated in NEPC (2013);
- The analyte selection is based on the available site history, past site activities, site features and the findings of the previous investigations. The potential for contaminants other than those proposed to be analysed is currently considered to be low;
- The SAC will be adopted from established and EPA endorsed guidelines where available. The SAC have risk probabilities already incorporated;
- Only NATA accredited laboratories using NATA endorsed methods will be used to perform laboratory analysis. Where NATA endorsed methods are not used, the reasons will be stated. The effect of using non-NATA methods (if relevant) on the decision making process will be explained.

Step 7 - Optimise the Design for Obtaining Data

Sampling design and procedures that will be implemented to optimise data collection for achieving the DQOs included the following as stated in the Auditor approved SAQP (DP 2020):

- Only NATA accredited laboratories using NATA endorsed methods are used to perform laboratory analysis whenever possible;
- Targeted soil sampling (within access constraints) will generally be used to provide supplementary information at the site;
- To optimise the selection of soil samples for chemical analysis, samples collected will be screened using a calibrated PID allowing for site assessment and sample selection. In addition, additional soil samples will be collected but kept ‘on hold’ pending details of initial analysis and will be analysed if further delineation is required; and

Adequately experienced environmental scientists / engineers were chosen to conduct field work and sample analysis interpretation.

8.2 Sampling and Analysis

Soil sampling and analysis was undertaken in general accordance with DP Sampling Quality and Analysis Plan (SAQP) drafted by DP in April 2020 (DP, 2020). A brief summary of the sampling procedures are summarised below.

8.2.1 Soil Sample Collection, Decontamination and Preservation

Soil samples for contamination testing were collected with reference to environmental sampling protocols and C-O-C documentation.

Soil samples for contamination assessment were collected at regular depth intervals and/or changes in strata based on field observations, including from the near surface, and upon possible signs of contamination such as odours or staining. Soil samples were collected directly from test pits walls using stainless steel sampling equipment and / or disposable gloves. Care was taken to remove any extraneous material deposited on the sample.

All sampling data was recorded on DP chain of custody (C-O-C) sheets. The general sampling procedure comprised:

- Decontamination of sampling equipment using a 3% solution of phosphate free detergent (Decon 90) and tap water prior to collecting each sample;
- The use of new disposable gloves for each sampling event;
- Transfer of samples into laboratory-prepared jars and capping immediately;
- Collection of replicate soil samples in zip-lock plastic bags at each depth for screening by PID;
- Collection of replicate and triplicate samples for QA/QC purposes;
- Labelling of sample containers with individual and unique identification, including project number, sample location and sample depth;
- Placement of the sample containers and replicate sample bags into a cooled, insulated and sealed container for transport to the laboratory.

The process of obtaining samples and their transportation, storage and delivery to laboratories for analysis was documented on a DP standard C-O-C. Copies of completed forms are provided in Appendix C.

Replicate samples for each soil sample were screened for the presence of VOCs, using a MiniRAE LITE PID or MiniRAE 3000 with a 10.6 eV lamp, calibrated to 100 ppm Isobutylene.

8.2.2 Field QA/QC

DP's QA/QC procedures were adopted throughout the field sampling programme.

Regular collection of duplicate/replicate samples will be undertaken during field sampling. Accuracy and precision will be assessed through the analysis of 10% field duplicate / replicate samples.

Appropriate procedures will be undertaken to minimise the potential for cross contamination. Field QA/QC procedures will include the following:

- Standard operating procedures are followed;
- Site safety and environmental plans are developed prior to commencement of works;
- Duplicate or replicate field samples are collected and analysed;
- Samples are stored under secure, temperature-controlled conditions;
- Chain of custody documentation is employed for the handling, transport and delivery of samples to the selected laboratory.

8.2.3 Laboratory QA/QC

The NATA accredited chemical laboratory undertook in-house QA/QC procedures involving the routine testing of:

- Reagent blanks;
- Spike recovery analysis;
- Intra laboratory duplicates and inter laboratory triplicate analysis;
- Analysis of control standards;
- Calibration standards and blanks; and
- Statistical analysis of QC data.

9. Laboratory Testing

9.1 Analytical Programme

Laboratory testing for the supplementary detailed investigation was undertaken by Envirolab Services Pty Ltd and ALS Environmental, both NATA registered laboratory. Analytical methods used are shown in the laboratory sheets in Appendix B.

A total of 79 soil samples (including 11 QA/QC soil samples) and six fibro material sample were selected to provide an assessment of soil / fill conditions. The samples were selected to target the previously identified contaminants (ie PAHs and hydrocarbons) while also assessing the broader suite of potential contaminants identified in the SAQP. The fill / soil samples were analysed for a range of potential contaminants as presented below:

Access Track

- Total Recoverable Hydrocarbons (TRH);
- Polycyclic Aromatic Hydrocarbons (PAH);
- Total Phenols.

Existing Building Structures

- Metals: Lead (Pb);
- Organochlorine (OC) and Organophosphate (OP) Pesticides;
- Asbestos Identification (fibro fragments and 500ml soil samples).

Stockpiles

- Metals: Arsenic (As), Cadmium (Cd), Chromium (Cr), Copper (Cu), Iron (Fe), Lead (Pb); Mercury (Hg), Manganese (Mn), Nickel (Ni), Zinc (Zn); Aluminium (Al) and Selenium (Se);
- Total Recoverable Hydrocarbons (TRH);
- Benzene, Toluene, Ethyl Benzene, Xylene (BTEX);
- Polycyclic Aromatic Hydrocarbons (PAH);
- Polychlorinated Biphenyls (PCBs);
- Organochlorine (OC) and Organophosphate (OP) Pesticides;
- Asbestos Identification (500ml soil samples).

QA/QC comprised analysis of seven replicate soil samples and four triplicate samples. The results of the QA/QC are summarised in Appendix C.

The laboratory report sheets are provided in Appendix B.

9.2 Analytical Results

9.2.1 Contamination Testing

The results of chemical analysis undertaken on soil samples are summarised in Tables B1 to B11 in Appendix B.

10. Site Assessment Criteria (SAC)

10.1 Introduction

It is understood that the proposed development at Lot 100 Maitland Street, Muswellbrook will comprise a primary or secondary school facility.

The Site Assessment Criteria (SAC) applied in the current investigation is informed by the CSM which identified human and ecological receptors to potential contamination on the site (refer to Section 6). 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 for a generic low density residential land use which also applies to primary schools.

10.2 Soils

10.2.1 Health Investigation and Screening Levels

The generic HIL and HSL for residential land use (HIL A and HSL A) are considered to be appropriate for the assessment of contamination at the site. The adopted soil HIL and HSL for the potential contaminants of concern are presented in Table 6.

Table 6: HIL and HSL in mg/kg Unless Otherwise Indicated

Contaminants		HIL- A	HSL- A[3]
Metals	Arsenic	100	NC
	Cadmium	20	NC
	Chromium (VI)	100	NC
	Copper	6000	NC
	Lead	300	NC
	Manganese	3800	NC
	Mercury (inorganic)	40	NC
	Nickel	400	NC
	Zinc	7400	NC
PAH	Benzo(a)pyrene TEQ[1]	3	NC
	Naphthalene	NC	3
	Total PAH	300	NC
TRH	C6 – C10 (less BTEX) [F1]	NC	45
	>C10-C16 (less Naphthalene) [F2]	NC	110
	>C16-C34 [F3]	NC	NC
	>C34-C40 [F4]	NC	NC
BTEX	Benzene	NC	0.5
	Toluene	NC	160
	Ethylbenzene	NC	55
	Xylenes	NC	40
OCP/ OPP	Aldrin + Dieldrin	6	NC
	Chlordane	50	NC
	DDT+DDE+DDD	240	NC
	Endosulfan	270	NC
	Endrin	10	NC
	Heptachlor	6	NC
	Methoxychlor	300	NC
	Chlorpyrifos	160	NC
PCB[4]		1	NC

Notes to Table 6:

1 Sum of carcinogenic PAH

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

3 The HSL have been calculated for a potential vapour intrusion pathway, a sand soil (conservative approach based on a mix of sandy and clayey fill encountered) and an assumed depth to contamination of 0 m to <1 m.

4 non dioxin-like PCBs only

As shown in Table 6, the adopted HSLs are predicated on a potential vapour intrusion pathway, as identified in the CSM. Although the CSM also identifies a direct contact pathway, and construction worker receptors, the corresponding HSLs are significantly higher than those for the vapour intrusion pathway and are therefore not drivers for further assessment and / or remediation. As such the direct contact and intrusive maintenance worker HSLs have not been listed.

10.2.2 Ecological Investigation Levels

EIL and Added Contaminant Limits (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. The adopted EILs, derived using the *Interactive (Excel) Calculation Spreadsheet* (Standing Council on Environment and Water (SCEW) website (http://www.scew.gov.au/node/941)) are shown in the following Table 7.

Table 7: EIL in mg/kg

Analyte		EIL	Comments
Metals	Arsenic	100	**Adopted parameters** pH = 6 (conservative value in the absence of lab testing) CEC = 5 $cmol_c$/kg (conservative value in the absence of lab testing) assumed clay content 5% in filling (conservative) 'Aged' (>2 years) source of contamination high for traffic volumes in NSW
	Copper	110	
	Nickel	35	
	Chromium III	320	
	Lead	1100	
	Zinc	310	
PAH	Naphthalene	170	

10.2.3 Ecological Screening Levels

ESL are used to assess the risk of selected petroleum hydrocarbon compounds, BTEX and benzo(a)pyrene to terrestrial ecosystems. The adopted ESL are shown in the following Table 8.

Table 8: ESL in mg/kg

Analyte		ESL[1]	Comments
TRH	$C_6 – C_{10}$ (less BTEX) [F1]	180*	All ESLs are low reliability apart from those marked with * which are moderate reliability
	$>C_{10}-C_{16}$ (less Naphthalene) [F2]	120*	
	$>C_{16}-C_{34}$ [F3]	300	
	$>C_{34}-C_{40}$ [F4]	2800	
BTEX	Benzene	50	
	Toluene	85	
	Ethylbenzene	70	
	Xylenes	105	
PAH	Benzo(a)pyrene	33	

Notes to Table 8:

[1] The ESL have been calculated for a coarse soil based on the upper silty sandy filling being the predominant contaminated soil type and Urban residential and public open space land use

The NEPM ESL of 0.7 mg/kg is understood to be based on a single invertebrate species referenced in the 1999 Canadian Soil Quality Guidelines (since updated) and is considered conservative in the Australian context. These guidelines were updated in 2010 and now suggest a B(a)P concentration of 20 mg/kg for the protection of environmental health based on the soil contact exposure pathway.

It is also noted that the benzo(a)pyrene ESL is a low reliability value. Higher reliability screening levels have been published in CRC CARE (2017), Risk-based Management and Remediation Guidance for Benzo(a)pyrene, CRCCARE Technical Report No. 39. The high reliability value of 33 mg/kg for aged contamination recommended in CRC CARE (2017) has therefore been adopted.

10.2.4 Management Limits

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

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

The adopted management limits from Schedule B1 of NEPC (2013) are shown in the following Table 8.

Table 9: Management Limits in mg/kg

Analyte		Management Limit	
TRH	$C_6 – C_{10}$ (F1) #	700	The management limits have been calculated for a coarse soil based on sandy fill being the predominant soil type at surface and residential landuse. This assumption is conservative due to the mix of sandy and clayey soils present within the stockpiles.
	$>C_{10}$-C_{16} (F2) #	1000	
	$>C_{16}$-C_{34} (F3)	2500	
	$>C_{34}$-C_{40} (F4)	10000	

Notes to Table 9:

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

10.2.5 Asbestos in Soil

Bonded 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.

Schedule B2 of NEPC (2013) describes the recommended assessment process for asbestos in soil, commencing with a preliminary assessment, looking into the site history and conditions and therefore the propensity for asbestos to be present. The preliminary assessment may or may not include sampling and testing. A detailed assessment of asbestos contamination is recommended in NEPC (2013) under the following circumstances:

- To resolve uncertain findings from the preliminary assessment (e.g. the extent, quality and quantity of asbestos in soil is not known and the potential for asbestos is identified); and / or
- The remediation and management approach requires asbestos contamination to be fully delineated and assessed (e.g. asbestos contamination is to be relocated and contained); and / or
- To assist in assessing the likely effectiveness of alternative remediation and management strategies; and / or
- Land uses are to be determined and delineated according to the extent and nature of the asbestos contamination.

The previous assessment findings are used as a tool to assess the likelihood of finding asbestos in soil at the site, and the form of asbestos that may occur. The lack of reported asbestos at a sample location does not necessarily mean that asbestos is not present at the location.

The health screening levels for asbestos are presented in Table 10 below:

Table 10: Health Screening Levels (HSLs) in mg/kg

Form of Asbestos	Health Screening Level – Residential A (including day care centres) (w/w)
Bonded ACM	0.01%
AF	0.001%

It is noted that observations of minor fibro fragments (potential ACM) were limited to the surface immediately adjacent to some existing buildings. There were no obvious indication of building rubble or potential ACM within general site soils/fill or within stockpiled materials. Sieving for detailed asbestos investigation was therefore not considered to be warranted.

10.2.6 Waste Classification

The results of chemical testing were also compared against NSW EPA (2014) to assess possible off-site disposal options to a licenced facility (if required).

11. Assessment of Contamination

11.1 Asphalt access track

The results of chemical analysis from the supplementary investigation indicated the soil samples tested within the asphalt access track were generally within the health investigation levels for low density residential land use (primary schools) (HIL-A/EIL), with the exception of four samples exceeding the human health landuse criteria for benzo(a)pyrene TEQ and one sample exceeding total PAH. It is noted that all the samples exceeding the human health criteria generally comprised the asphalt wearing course, associated with the current pavement (ie asphalt at the surface) or former pavement (ie buried asphalt wearing course - asphalt lens).

One soil sample (413/0.15) comprising pavement subbase filling immediately below the asphalt wearing course which marginally exceeded the HIL criteria for benzo(a)pyrene TEQ. Upon further inspection of material tested, minor asphalt fragments were observed within the sample. The elevated PAH in this sample is therefore likely to be a result of cross contamination from the overlying asphalt layer.

Results of coal tar and Phenol testing within the four samples of asphalt tested indicated the absence of coal tar or Phenols.

To further assess the possible origins and implications (if any) of elevated PAH in asphalt materials, the analytical Chromatographs were reviewed by the testing laboratory (Envirolab) and DP against generic Chromatographs for various materials (ie Envirolab reference library). Based on the review, the Chromatographs generally suggest that the elevated PAH impacts are associated with asphalt / bitumen and charcoal/coal. The Chromatographs of the asphalt sample and the chromatograph for generic asphalt from the Envirolab reference library are included in Appendix B for reference.

Additional ASLP leachate testing was also conducted on the subbase materials that contained elevated PAH (413/0.15) due to asphalt fragments. The results of testing indicated that the materials had a low propensity to leach.

The following observations were also made regarding the condition of the asphalt wearing course materials at the current surface of the site (ie Pits 401 to 405 and 410 to 413) and the buried asphalt wearing course (ie Pits 106A, 406 to 409):

- Asphalt on the surface appears to have larger subrounded gravel and comprises less binding materials (bitumen) within its matrix. The surface asphalt also generally comprised lower PAH concentrations;
- The buried asphalt layer (lens) at depth (0.2 m to 0.4 m) within the central northern portion of the site appears to have smaller subangular gravel and comprises more binding material within its matrix. Previous and current testing within the buried asphalt also indicates the PAH content within the asphalt / bitumen is variable with results ranging from below detection limits to 90 mg/kg of B(a)P.

Photos of the asphalt samples are shown in the photo plates, Appendix D. It is noted, however, that both asphalt materials are associated with granular pavement construction for access tracks within the site. Additional granular materials have been placed over the buried asphalt pavement within the central northern portion of the site. Refer to Photo 37 in Appendix D showing the general soil profile associated with the buried asphalt layer and granular pavements.

It is noted that where B(a)P occurs in bitumen fragments (ie associated with road pavements) it is relatively immobile and typically has a low bioavailability. On this basis, the occurrence of B(a)P related to bitumen/asphalt within the current/former pavements does not represent a significant health risk as indicated in NEPM (2013) Schedule B1. In addition, the pavement materials generally conform with the NSW EPA Recovered Aggregate resource recovery order and as such are generally suitable for "application to land as a road making material, or in building, landscaping or construction works".

The four samples in question also exceeded the ecological investigation (EIL) criteria for hydrocarbons and benzo(a)pyrene . As indicated the asphalt and fill materials within the access track comprise pavement material. Such materials are considered to hold low significance to the ecological environment and are therefore considered to be low risk.

The following previous results from within the access track are also noted:

- PCA (JK, 2019) two bores (Bore 2 and 4) indicated marginally elevated B(a)P TEQ (Bore 2) above HIL A and TRH (Bore 4) above ESL;
- The bores undertaken by JK indicated asphalt and ash within the surface samples which is generally consistent with the subsurface profile encountered by DP;
- The marginally elevated results of B(a)P TEQ and TRH are also generally consistent with the concentrations encountered in the asphalt surface samples encountered in the supplementary DSI;
- Results of the DSI (DP, 2019) also comprised two bores within the access track (Bores 106 and 107), Bore 106 was retested as 106a and is detailed within the supplementary DSI;
- Bore 107 did not indicate elevated contaminant concentrations.

The results of previous testing are generally commensurate with the results of the current assessment.

Based on the results of the current and previous testing, the elevated PAH/TRH associated with pavement materials observed within the access track are therefore not considered to be significant due to the following:

- Although elevated B(a)P was found, it can be attributed to the asphalt/bitumen wearing course (at the surface and buried) associated with current/former pavements/paths within the site;
- The asphalt/bitumen materials typically have a low bioavailability and are relatively immobile as evidenced by leachability testing (ie indicating a low propensity to leach);
- Results of testing and observations (visual and olfactory) within the asphalt materials indicated the absence of coal tar and phenols;
- The source of elevated PAH are likely to be due to asphalt/bitumen and charcoal/coal based on the Chromatographs;
- According to NEPM (2013), elevated levels of B(a)P in relatively immobile sources, such as bitumen fragments, do not represent a significant risk;
- The materials in question are associated with pavement materials within the site. The pavement materials generally conform with the NSW EPA Recovered Aggregate resource recovery order and as such are generally suitable for "application to land as a road making material, or in building, landscaping or construction works".

It is also noted that the proposed school development includes a car parking area at the front of the site. The pavement materials in question could be utilised beneath the car park area as a precautionary measure for the proposed school development. It is noted that the asphalt/bitumen materials are pre-classified General Solid Waste for disposal to a licensed landfill, or could be considered for recycling.

11.2 Building Surrounds

The results of chemical analysis from the supplementary indication indicated the surface and near surface soils tested surrounding the existing buildings were all within the health investigation levels for low density residential land use (primary schools) (HIL-A/EIL). Minor detectable concentrations of OCP pesticides were observed surrounding Building 1; however, these results were within the health-based criteria for the proposed development.

Two of the six fibro fragments tested for asbestos identification indicated the presence of ACM adjacent to Buildings 5 and 8. The fibro fragments (generally in good condition) observed across the site were directly adjacent the buildings and at the surface. It is also noted that 500mL asbestos testing within the surface soils surrounding fibro / weatherboard buildings indicated the absence of asbestos within the surface soils.

The minor ACM identified within the fibro fragments at the surface adjacent to existing Buildings 5 and 8 are likely to be associated with the poor condition of the buildings, and do not appear to be related to impacts within underlying soil/fill.

11.3 Stockpile Materials

The results of chemical analysis within the stockpiled soils were all within the health investigation levels for low density residential land use (primary schools) (HIL-A/EIL). It is also noted that building materials such as fibro, brick, concrete, tile, ceramics, etc were not observed within the stockpiled materials. The results of 500mL asbestos testing within the stockpiled soils indicated the absence of ACM within the samples tested.

Three primary samples and two QA samples exceeded the ecological investigation (EIL) criteria for zinc (four), nickel (1) and copper (1). It is noted that abundant vegetation growth was observed in several stockpiles and due to the relatively small volumes of the stockpiled materials, the minor EIL exceedances are not considered to be significant.

11.4 Waste Classification

The majority of the samples tested in the access track returned contaminant concentrations below maximum permissible concentrations for classification as General Solid Waste (GSW) without leachate testing, with reference to NSW EPA (2014), with the exception of elevated benzo(a)pyrene within subbase filling in Pit 413/0.15.

Additional TCLP leachate testing was conducted on the subbase materials that contained elevated total contaminant concentrations and indicated that the materials tested had a low propensity to leach. The soils tested were reclassified as GSW, with reference to the NSW EPA (2014).

Based on the observations made and the results of laboratory testing, the materials tested are classified as 'General Solid Waste' based on total and leachable contaminant concentrations (ie SCC1 / TCLP1). These materials are suitable for off-site disposal at a facility licenced to accept licensed to accept GSW (TCLP1).

As discussed, majority of the samples with elevated results were asphalt materials sampled from the asphalt wearing course or buried asphalt layer. Testing within this material also confirmed the absences of coal tar. The asphalt materials are therefore pre-classified as GSW, with reference to the NSW EPA (2014).

As outlined in Section 11.1 the results of the previous assessments undertaken by JK and DP are consistent with the observations and contaminant concentrations encountered within the current supplementary DSI. Elevated B(a)P was encountered within a surface sample of Bore 2 (JK, 2019). The results of TCLP testing within the access track indicate a low propensity to leach as described above. The elevated B(a)P may also be attributed to asphalt materials which are pre-classified as GSW, with reference to the NSW EPA (2014) as described above.

12. Comments / Recommendations

The results of the supplementary assessment have identified the following:

- General absence of gross contamination within the site;
- Presence of shallow filling within majority of test pits / bores;
- Presence of ash and coal reject within the upper fill materials within the access track footprint;
- Presence of buried asphalt lenses (ie associated with a former pavement) in pits north-west of Building 5 (Pits 406, 407, 408, 409 and 106A);
- Asphalt materials exceeded the adopted HIL and EIL, however, the exceedances can be attributed to the asphalt / bitumen wearing course which typically has low bioavailability and are relatively immobile. The elevated results are therefore not considered to be significant as discussed in Section 11.1;
- Laboratory results indicated the absence of coal tar with the asphalt samples tested;
- Fill materials tested are within the criteria for classification as GSW based on total and leachable concentrations;
- Asphalt materials are pre-classified as GSW, with reference to the NSW EPA (2014);
- Testing on two fibro fragments at the surface adjacent to Buildings 5 and 8 indicated the presence of ACM. The minor ACM identified are likely to be associated with the poor condition of the adjacent buildings, and do not appear to be related to impacts within underlying soil/fill.
- General absence of gross contamination within the stockpiled soils tested.

In summary, the site is considered to be suitable for the proposed school development in relation to site contamination, subject to appropriate demolition of existing structures and clearance of hazardous building materials including minor surface ACM identified adjacent to Buildings 5 and 8.

It is noted that the proposed school development includes a car parking area at the front of the site. The existing pavement materials within the site (including the buried pavement at Pit 106) containing elevated PAH could be utilised beneath the car park area for pavement construction as a precautionary measure. It is recommended that the pavement materials containing asphalt/bitumen are not reused on-site at the site surface due to aesthetic considerations and to limit dermal contact.

It is understood that residential development may be considered in future for the site. If residential development is considered, it is recommended that the existing pavement materials containing asphalt/bitumen and elevated PAH are appropriately removed/disposed from the site and validated.

As indicated in the SAQP (DP, 2020), post-demolition surface inspections will be conducted over building footprints and the immediate surrounds to confirm site conditions following demolition activities. Demolition should be conducted by a licensed contractor in accordance with statutory and regulatory requirements and include clearance for hazardous building materials. A brief report should be prepared presenting the results of post-demolition inspections, sampling and testing for clearance to address the minor ACM impacts identified. The validation report should include details of any material disposed off-site (other than construction and demolition waste) or imported to site during demolition works.

12.1 Updated Conceptual Site Model

The data collected for the supplementary assessment has generally confirmed that certain potential contaminant sources outlined in the CSM in Section 8 pose a potentially complete pathway to the identified receptor(s) whilst others do not. No additional sources of contamination have been identified as a result of the testing results.

Based on the above an updated CSM has been prepared and described below in Table 11.

Table 11: Updated Conceptual Site Model

Known Sources	Primary Release Mechanism	Secondary Release Mechanism	Impacted Media	Identified Contaminants of Concern	Exposure Pathway	Potential Receptors		Actual Risk to Receptors based on DSI Findings
						Current	Future	
Demolition of former structures or maintenance, renovations to existing / former buildings	Demolition / maintenance of buildings / structures	Exposure / disturbance during proposed development	Surface and near surface Soils	Asbestos (Bonded ACM)	inhalation (dust), ingestion	Site workers, maintenance workers, consultants, trespassers.	Site workers, residents, maintenance workers, consultants, trespassers	Low to Moderate (Bonded Asbestos impacts identified at the surface)

13. Conclusions

The supplementary investigation was conducted to address data gaps and confirm the contamination status of the site. The results of investigations generally indicate the absence of gross contamination within the site.

The site is considered to be suitable for the proposed school development in relation to site contamination, subject to appropriate demolition of existing structures and clearance of hazardous building materials including minor surface ACM identified adjacent to Buildings 5 and 8.

It is noted that the proposed development includes a car parking area at the front of the site. The existing pavement materials within the site found to contain elevated PAH (associated with asphalt/bitumen) could be utilised beneath the car park area for pavement construction as a precautionary measure. If potential future residential development is proposed the existing pavement materials with elevated PAH should be remediated, validated and disposed off site to a licensed landfill.

Post-demolition surface inspections are recommended over building footprints and the immediate surrounds to confirm site conditions following demolition activities. A brief report should be prepared presenting the results of post-demolition inspections, sampling and testing for clearance to address the minor ACM impacts identified.

14. References

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

ANZAST (2018), *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, Australian Government Initiative, August 2018.

DP (2020), *Sampling, Analysis and Quality Plan Supplementary Contamination Assessment, Lot 100 Maitland Street, Muswellbrook,* Report 91601.03.00.R.001.Rev6, dated March 2020, Douglas Partners Pty Ltd.

DP (2019a), *Detailed Site Investigation (Contamination), Lot 100 Maitland Street, Muswellbrook, NSW*, Douglas Partners Pty Ltd, Report 91601.00.R.001.Rev6.

DP (2019b), *Hazardous Building Materials (HBM) Survey, Lot 100 Maitland Street, Muswellbrook, NSW*, Douglas Partners Pty Ltd, Report 91601.01.R.001.Rev0

JK (2019), *Preliminary Contamination Assessment, Lot 62, Maitland Street, Muswellbrook, NSW*, JK Environments, 30 April 2019.

NEPM (2013), *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013'*, National Environment Protection Council.

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

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

15. Limitations

Douglas Partners Pty Ltd (DP) has prepared this report for this project at Lot 100 Maitland Street, Muswellbrook with reference to DP's email proposal NCL200113 dated 2 April 2020 and acceptance received from Pacific Brook Christian School Ltd. The work was carried out under an agreed Professional Services Contract Agreement. This report is provided for the exclusive use of Pacific Brook Christian School 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.

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 and by laboratory analysis, on the surface of the site. 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 (i.e. due to concrete pavements). It is therefore considered possible that HBM, including asbestos, may be present in unobserved or untested parts of the site, between and beyond sampling locations, and hence no warranty can be given that asbestos is not present.

The contents of this report do not constitute formal design components such as are required, by the Health and Safety Legislation and Regulations, to be included in a Safety Report specifying the hazards likely to be encountered during construction and the controls required to mitigate risk. This design process requires risk assessment to be undertaken, with such assessment being dependent upon factors relating to likelihood of occurrence and consequences of damage to property and to life. This, in turn, requires project data and analysis presently beyond the knowledge and project role respectively of DP. DP may be able, however, to assist the client in carrying out a risk assessment of potential hazards contained in the Comments section of this report, as an extension to the current scope of works, if so requested, and provided that suitable additional information is made available to DP. Any such risk assessment would, however, be necessarily restricted to the environmental components set out in this report and to their application by the project designers to project design, construction, maintenance and demolition.

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Appendix A

About This Report
Sampling Methods
Soil Descriptions
Symbols and Abbreviations
Test Pit Logs (Pits 401 to 413, 106A and 501 to 503)

About this Report

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Introduction

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

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

Copyright

Borehole and Test Pit Logs

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

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

Groundwater

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

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

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

Reports

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

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

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

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

About this Report

Site Anomalies

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

Information for Contractual Purposes

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

Site Inspection

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

Sampling 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).

Symbols & Abbreviations

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Introduction

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

Drilling or Excavation Methods

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

Water

▷	Water seep
▽	Water level

Sampling and Testing

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

Description of Defects in Rock

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

Defect Type

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

Orientation

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

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

Coating or Infilling Term

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

Coating Descriptor

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

Shape

cu	curved
ir	irregular
pl	planar
st	stepped
un	undulating

Roughness

po	polished
ro	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

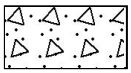
Symbols & Abbreviations

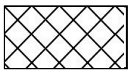
Graphic Symbols for Soil and Rock

General

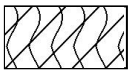

Asphalt

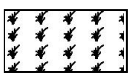

Road base

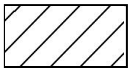

Concrete

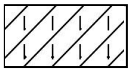

Filling

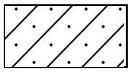
Soils


Topsoil

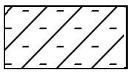

Peat

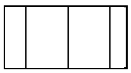

Clay

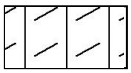

Silty clay

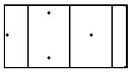

Sandy clay

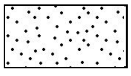

Gravelly clay

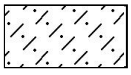

Shaly clay

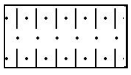

Silt


Clayey silt


Sandy silt

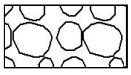

Sand

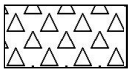

Clayey sand


Silty sand


Gravel

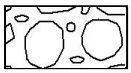

Sandy gravel


Cobbles, boulders

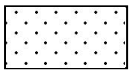

Talus

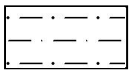
Sedimentary Rocks

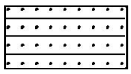

Boulder conglomerate

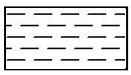

Conglomerate


Conglomeratic sandstone

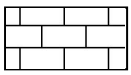

Sandstone


Siltstone

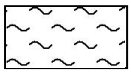

Laminite

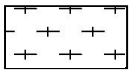

Mudstone, claystone, shale

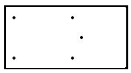

Coal


Limestone

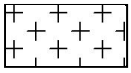
Metamorphic Rocks

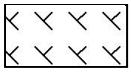

Slate, phyllite, schist

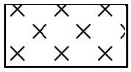

Gneiss

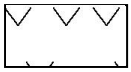

Quartzite

Igneous Rocks


Granite


Dolerite, basalt, andesite


Dacite, epidote


Tuff, breccia


Porphyry

TEST PIT LOG

CLIENT: Pacific Brook Christian School Ltd
PROJECT: Preparation of SAQP, Proposed School
LOCATION: Lot 100 DP1261496, Maitland Street, Muswellbrook NSW

SURFACE LEVEL: --
EASTING: 301967
NORTHING: 6426916.7

PIT No: 401
PROJECT No: 91601.03
DATE: 7/4/2020
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
	0.1	ASPHALT		D	0.05	E	PID<1		
	0.2	FILL / ASH - Fine to coarse grained, dark grey with fine gravel, and coal reject, moist		D	0.15	E	PID<1		
		SILTY CLAY - Low plasticity pale brown, M<WP		D	0.25 0.3	B	pp = 350		
					0.4		PID<1		
		From 0.6m, medium plasticity and brown M>WP, very stiff			0.8		pp = 350-400		
	0.9	Pit discontinued at 0.9m, limit of investigation							
	1								1
	2								2
	3								3
	4								4

RIG: 6.5 Tonne Excavator with 450mm bucket (teeth)

LOGGED: Sebastian

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

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

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Pacific Brook Christian School Ltd
PROJECT: Preparation of SAQP, Proposed School
LOCATION: Lot 100 DP1261496, Maitland Street, Muswellbrook NSW

SURFACE LEVEL: --
EASTING: 301959.7
NORTHING: 6426923.2

PIT No: 402
PROJECT No: 91601.03
DATE: 7/4/2020
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)
	0.05	ASPHALT		D	0.01	E	PID<1		
	0.15	FILL / GRAVELLY SAND - Generally comprising fine to medium grained brown, trace subrounded cobbles, moist		D	0.17	E	PID<1		
	0.2	FILL / ASH - Fine to coarse grained, dark grey with fine gravel, and coal reject, moist		D	0.4	E	PID<1		
		SILTY CLAY - Medium plasticity, pale brown, M>WP							
	0.8	Pit discontinued at 0.8m, limit of investigation							
	1								
	2								
	3								
	4								

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

RIG: 6.5 Tonne Excavator with 450mm bucket (teeth)
LOGGED: Sebastian
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

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

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Pacific Brook Christian School Ltd
PROJECT: Preparation of SAQP, Proposed School
LOCATION: Lot 100 DP1261496, Maitland Street, Muswellbrook NSW

SURFACE LEVEL: --
EASTING: 301942
NORTHING: 6426943

PIT No: 403
PROJECT No: 91601.03
DATE: 7/4/2020
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)
	0.05	ASPHALT		D	0.01	E	PID<1		
	0.1	FILL / GRAVELLY SAND - Generally comprising fine to medium grained brown, trace subrounded cobbles, moist		D	0.2	E	PID<1		
	0.3	FILL / ASH - Fine to coarse grained, dark grey with fine gravel, and coal reject, moist		D	0.4	E	PID<1		
	0.5	SILTY CLAY - Medium plasticity, pale brown, M>WP							
		Pit discontinued at 0.5m, limit of investigation							

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

1
2
3
4

RIG: 6.5 Tonne Excavator with 450mm bucket (teeth)

LOGGED: Sebastian

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

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

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Pacific Brook Christian School Ltd
PROJECT: Preparation of SAQP, Proposed School
LOCATION: Lot 100 DP1261496, Maitland Street, Muswellbrook NSW

SURFACE LEVEL: --
EASTING: 301998
NORTHING: 6426955

PIT No: 404
PROJECT No: 91601.03
DATE: 7/4/2020
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)
	0.05	ASPHALT							
	0.1	FILL / GRAVELLY SAND - Generally comprising fine to medium grained brown, trace subrounded cobbles, moist		D	0.2	E	PID<1		
	0.25	FILL / ASH - Fine to coarse grained, dark grey with fine gravel, and coal reject, moist							
		SILTY CLAY - Medium plasticity, pale brown with fine sand, M>WP							
	0.8	Pit discontinued at 0.8m, limit of investigation							
	1								
	2								
	3								
	4								

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

RIG: 6.5 Tonne Excavator with 450mm bucket (teeth)
LOGGED: Sebastian
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

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

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Pacific Brook Christian School Ltd
PROJECT: Preparation of SAQP, Proposed School
LOCATION: Lot 100 DP1261496, Maitland Street, Muswellbrook NSW

SURFACE LEVEL: --
EASTING: 301984.2
NORTHING: 6426979.9

PIT No: 405
PROJECT No: 91601.03
DATE: 7/4/2020
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 150mm)
	0.03	ASPHALT							
	0.15	FILL / GRAVELLY SAND - Generally comprising fine to medium grained brown, trace subrounded cobbles, moist		D	0.2	E	PID<1		
	0.25			D	0.3				
		FILL / ASH - Fine to coarse grained, dark grey with fine gravel, and coal reject, moist			0.4		pp = 200		
		SILTY CLAY - Low plasticity, pale brown, some fine grained sand and rootlets		U					
	0.8	SILTY CLAY - Medium plasticity, brown, very stiff to hard M<WP			0.8 0.85		pp >400		
				D	1.5		pp >400		
		From 2.3m, with sandy clay and gravel		D	2.3				
				D	2.5				
	2.85	Pit discontinued at 2.85m, limit of investigation							

RIG: 6.5 Tonne Excavator with 450mm bucket (teeth)

LOGGED: Sebastian

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

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

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Pacific Brook Christian School Ltd
PROJECT: Preparation of SAQP, Proposed School
LOCATION: Lot 100 DP1261496, Maitland Street, Muswellbrook NSW

SURFACE LEVEL: --
EASTING: 301987.1
NORTHING: 6426982.7

PIT No: 406
PROJECT No: 91601.03
DATE: 7/4/2020
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
	0.3	FILL / SILTY SAND - Fine to medium grained, brown with gravel, clay and trace rootlets, moist							
	0.4	FILL - Dark grey, asphaltic lens		D	0.35	E	PID<1		
	0.7	SILTY CLAY - Pale brown, low plasticity, with some fine grained sand, M<WP							
	1	Pit discontinued at 0.7m, limit of investigation							
	2								
	3								
	4								

RIG: 6.5 Tonne Excavator with 450mm bucket (teeth)

LOGGED: Sebastian

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

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

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Pacific Brook Christian School Ltd
PROJECT: Preparation of SAQP, Proposed School
LOCATION: Lot 100 DP1261496, Maitland Street, Muswellbrook NSW

SURFACE LEVEL: --
EASTING: 301998.5
NORTHING: 6426958.9

PIT No: 407
PROJECT No: 91601.03
DATE: 7/4/2020
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 / SILTY SAND - Brown, fine to medium grained, brown with gravel, clay and trace rootlets, moist							
		From 0.25m to 0.3m, asphaltic lens, asphaltic lens only on northern pit wall		D	0.28	E	PID<1		
	0.37	SILTY CLAY - Pale brown, low plasticity, with some fine grained sand, M<WP							
	0.6	Pit discontinued at 0.6m, limit of investigation							
	1								1
	2								2
	3								3
	4								4

RIG: 6.5 Tonne Excavator with 450mm bucket (teeth)
LOGGED: Sebastian
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

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

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Pacific Brook Christian School Ltd
PROJECT: Preparation of SAQP, Proposed School
LOCATION: Lot 100 DP1261496, Maitland Street, Muswellbrook NSW

SURFACE LEVEL: --
EASTING: 301986.1
NORTHING: 6426985.3

PIT No: 408
PROJECT No: 91601.03
DATE: 7/4/2020
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	FILL / SILTY SAND - fine to medium grained with gravel and clay, moist		D	0.21	E	PID<1		
		From 0.2m to 0.22m, trace asphaltic lens on south western corner of pit							
	0.3	SILTY CLAY - Pale brown, low plasticity, with some fine grained sand , M<WP							
	0.5	Pit discontinued at 0.5m, limit of investigation							
	1								
	2								
	3								
	4								

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

RIG: 6.5 Tonne Excavator with 450mm bucket (teeth)
LOGGED: Sebastian
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Little sample recovery in 0.21m sample

☐ 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: Pacific Brook Christian School Ltd
PROJECT: Preparation of SAQP, Proposed School
LOCATION: Lot 100 DP1261496, Maitland Street, Muswellbrook NSW

SURFACE LEVEL: --
EASTING: 301976.2
NORTHING: 6426996.7

PIT No: 409
PROJECT No: 91601.03
DATE: 7/4/2020
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)
	0.05	FILL / SILTY SAND - FIne to coarse grained, brown, moist		D	0.08	E	PID<1		
	0.1								
	0.15	FILL - Dark grey, asphaltic lens		D	0.2	E	PID<1		
	0.3	FILL / GRAVELLY SAND - Generally comprising fine to medium grained brown, trace subrounded cobbles, moist							
	0.5	FILL / ASH - Fine to coarse grained, dark grey with fine gravel, and coal reject, moist							
		SILTY CLAY - Pale brown, low plasticity, with some fine grained sand, M<WP							
	1	Pit discontinued at 0.5m, limit of investigation							
	2								
	3								
	4								

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

RIG: 6.5 Tonne Excavator with 450mm bucket (teeth)

LOGGED: Sebastian

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

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

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Pacific Brook Christian School Ltd
PROJECT: Preparation of SAQP, Proposed School
LOCATION: Lot 100 DP1261496, Maitland Street, Muswellbrook NSW

SURFACE LEVEL: --
EASTING: 301949
NORTHING: 6426978

PIT No: 410
PROJECT No: 91601.03
DATE: 7/4/2020
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 150mm)
	0.05	ASPHALT							
	0.25	FILL / ASH - Fine to coarse grained, dark grey with fine gravel, and coal reject, moist		D	0.2	E	PID<1		
		SILTY CLAY - Medium to high plasticity, brown, trace roots, M≥WP, firm to stiff			0.3		pp = 200		
				U					
		From 0.6m, very stiff			0.75				
	1			D	1.0	E	PID<1		
					1.8		pp = 200-300		
	2	From 2.0m, trace gravel							
				D	2.5	E	pp = 200-300 PID<1		
	2.7	Pit discontinued at 2.7m, limit of investigation							
	3								
	4								

RIG: 6.5 Tonne Excavator with 450mm bucket (teeth)

LOGGED: Sebastian

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

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

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Pacific Brook Christian School Ltd
PROJECT: Preparation of SAQP, Proposed School
LOCATION: Lot 100 DP1261496, Maitland Street, Muswellbrook NSW

SURFACE LEVEL: --
EASTING: 301416
NORTHING: 6426933

PIT No: 411
PROJECT No: 91601.03
DATE: 7/4/2020
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)
	0.05	ASPHALT		D	0.01	E	PID<1		
	0.1	FILL / GRAVELLY SAND - Generally comprising fine to medium grained brown, trace subrounded cobbles, moist		D	0.2	E	PID<1		
	0.3	FILL / ASH - Fine to coarse grained, dark grey with fine gravel, and coal reject, moist							
	0.5	SILTY CLAY - Medium plasticity, pale brown, M>WP							
		Pit discontinued at 0.5m, limit of investigation							
	1								
	2								
	3								
	4								

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

RIG: 6.5 Tonne Excavator with 450mm bucket (teeth)
LOGGED: Sebastian
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

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

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Pacific Brook Christian School Ltd
PROJECT: Preparation of SAQP, Proposed School
LOCATION: Lot 100 DP1261496, Maitland Street, Muswellbrook NSW

SURFACE LEVEL: --
EASTING: 301911
NORTHING: 6426984

PIT No: 412
PROJECT No: 91601.03
DATE: 7/4/2020
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)
	0.05	ASPHALT		D	0.01	E	PID<1		
	0.1	FILL / GRAVELLY SAND - Generally comprising fine to medium grained brown, trace subrounded cobbles, moist		D	0.15	E	PID<1		
	0.2	FILL / ASH - Fine to coarse grained, dark grey with fine gravel, and coal reject, moist							
	0.5	SILTY CLAY - Medium plasticity, pale brown, M>WP							
		Pit discontinued at 0.5m, limit of investigation							
	1								
	2								
	3								
	4								

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

RIG: 6.5 Tonne Excavator with 450mm bucket (teeth)
LOGGED: Sebastian
SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

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

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Pacific Brook Christian School Ltd
PROJECT: Preparation of SAQP, Proposed School
LOCATION: Lot 100 DP1261496, Maitland Street, Muswellbrook NSW

SURFACE LEVEL: --
EASTING: 301884
NORTHING: 6427006

PIT No: 413
PROJECT No: 91601.03
DATE: 7/4/2020
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
	0.1	ASPHALT		D	0.08	E	PID<1		
	0.2	FILL / GRAVELLY SAND - Generally comprising fine to medium grained brown, trace subrounded cobbles, moist		D	0.15	E	PID<1		
		SILTY CLAY - Medium plasticity, pale brown, M>WP							
	0.5	Pit discontinued at 0.5m, limit of investigation							
	1								1
	2								2
	3								3
	4								4

RIG: 6.5 Tonne Excavator with 450mm bucket (teeth)

LOGGED: Sebastian

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

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

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Pacific Brook Christian School Ltd
PROJECT: Preparation of SAQP, Proposed School
LOCATION: Lot 100 DP1261496, Maitland Street, Muswellbrook NSW

SURFACE LEVEL: --
EASTING: 301916.7
NORTHING: 6426947.5

PIT No: 501
PROJECT No: 91601.03
DATE: 7/4/2020
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 150mm)
	0.1	SANDY SILT / TOPSOIL - Fine to medium grained, dark brown with rootlets and clay, moist, M<Wp							
		SANDY CLAY - Medium plasticity, fine to medium grained, pale brown, trace roots, stiff		D	0.3	B			
		From 0.5m, very stiff		D	0.5		pp = 200-250		
	0.8				0.6				
		SILTY CLAY - Medium to high plasticity, brown, M<Wp, hard		D	1.0	B	pp >400		
					1.3				
	1.8	SANDY CLAY - Low plasticity, fine to medium grained, brown, M<Wp, hard		D	2.0				
		From 2m, increased resistance							
		From 2.1m, increased sand content		D	2.5				
	2.6	SILTY CLAY - Medium plasticity, brown, M≫Wp, hard		D	2.9		pp >400		
	3.0	Pit discontinued at 3.0m, limit of investigation							

RIG: 6.5 Tonne Excavator with 450mm bucket (teeth) and ripped

LOGGED: Sebastian

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

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

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Pacific Brook Christian School Ltd
PROJECT: Preparation of SAQP, Proposed School
LOCATION: Lot 100 DP1261496, Maitland Street, Muswellbrook NSW

SURFACE LEVEL: --
EASTING: 301858
NORTHING: 6427039

PIT No: 502
PROJECT No: 91601.03
DATE: 7/4/2020
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water
	0.1	SILTY SAND / TOPSOIL - Fine to medium grained, brown with oragnics and rootlets						
		SANDY CLAY - Medium plasticity, pale brown, fine to medium grained, with silt, M>WP, stiff		D	0.5		pp = 300	
		From 0.6m, very stiff		U50				
	0.8	SILTY CLAY - Medium to high plasticity, brown, trace sand, M≤WP, hard			0.9		pp >400	
	1			D	0.95 1.0			
	2			D	2.0		pp >400	
		From 2.2m, trace gravel						
				D	2.5			
	2.7	Pit discontinued at 2.7m, limit of investigation						
	3							
	4							

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: 6.5 Tonne Excavator with 450mm bucket (teeth) and ripped

LOGGED: Sebastian

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

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

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Pacific Brook Christian School Ltd
PROJECT: Preparation of SAQP, Proposed School
LOCATION: Lot 100 DP1261496, Maitland Street, Muswellbrook NSW

SURFACE LEVEL: --
EASTING: 310915
NORTHING: 6427021

PIT No: 503
PROJECT No: 91601.03
DATE: 7/4/2020
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 150mm)
	0.0	SANDY SILTY CLAY - High plasticity, dark brown, M>WP (possible filling)							
	0.3	SILTY CLAY - Medium plasticity, pale brown, M ≥Wp, firm			0.5		pp = 100-200		
				U					
	0.9	From 0.9m, very stiff			0.9		pp = 300		
1		SILTY CLAY - High plasticity, brown, M≫Wp, very stiff			0.95				1
					1.0				
				U					
					1.45				
		From 1.5m, hard			1.5		pp >400		
		From 1.8m, trace gravel							
2					2.0		pp >400		2
		From 2.2m, increased resistance							
	2.5	Pit discontinued at 2.5m, limit of investigation			2.5				
3									3
4									4

RIG: 6.5 Tonne Excavator with 450mm bucket (teeth) and ripped

LOGGED: Sebastian

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

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

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

TEST PIT LOG

CLIENT: Pacific Brook Christian School Ltd
PROJECT: Preparation of SAQP, Proposed School
LOCATION: Lot 100 DP1261496, Maitland Street, Muswellbrook NSW

SURFACE LEVEL: --
EASTING: 301930
NORTHING: 6426981

PIT No: 106A
PROJECT No: 91601.03
DATE: 7/4/2020
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)
	0.2	FILL / SILTY SAND - Fine to medium grained, brown, with gravel, clay and trace rootlets, moist							
	0.27	FILL - Dark grey, asphatic lens		D	0.25	E			
	0.3	FILL / GRAVELLY SAND - Generally comprising fine to medium grained brown, trace subrounded cobbles, moist		D	0.35	E			
	0.4			D	0.5	E			
	0.6	FILL / ASH - Fine to coarse grained, dark grey with fine gravel, and coal reject, moist							
		SILTY CLAY - Low plasticity, pale brown with fine grained sand, M<WP							
	1	Pit discontinued at 0.6m, limit of investigation							
	2								
	3								
	4								

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

RIG: 6.5 Tonne Excavator with 450mm bucket (teeth)

LOGGED: Sebastian

SURVEY DATUM: MGA94

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

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

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

Appendix B

Laboratory Report Sheets
Summary of Laboratory Results Tables B1 to B11
Chromatographs

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 240645

Client Details

Client	Douglas Partners Newcastle
Attention	Paulo Sebastian
Address	Box 324 Hunter Region Mail Centre, Newcastle, NSW, 2310

Sample Details

Your Reference	**91601.03, Muswellbrook**
Number of Samples	69 Soil, 6 Material
Date samples received	09/04/2020
Date completed instructions received	09/04/2020

Analysis Details

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

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

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

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

Report Details

Date results requested by	20/04/2020
Date of Issue	20/04/2020

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

Results Approved By
Diego Bigolin, Team Leader, Inorganics
Josh Williams, Senior Chemist
Loren Bardwell, Senior Chemist
Lucy Zhu, Asbestos Supervisor
Steven Luong, Organics Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		240645-51	240645-52	240645-53	240645-54	240645-55
Your Reference	UNITS	401/0.05	401/0.15	402/0.4	404/0.2	406/0.35
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
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
Surrogate aaa-Trifluorotoluene	%	91	82	77	79	88

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		240645-56	240645-57	240645-58	240645-59	240645-60
Your Reference	UNITS	106A/0.25	106A/0.35	106A/0.5	407/0.28	411/0.01
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
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
Surrogate aaa-Trifluorotoluene	%	86	72	91	71	93

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		240645-61	240645-62	240645-63	240645-64	240645-65
Your Reference	UNITS	412/0.15	413/0.15	D1/JPS	D3/JPS	301/1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
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	[NA]	[NA]	[NA]	[NA]	<0.2
Toluene	mg/kg	[NA]	[NA]	[NA]	[NA]	<0.5
Ethylbenzene	mg/kg	[NA]	[NA]	[NA]	[NA]	<1
m+p-xylene	mg/kg	[NA]	[NA]	[NA]	[NA]	<2
o-Xylene	mg/kg	[NA]	[NA]	[NA]	[NA]	<1
naphthalene	mg/kg	[NA]	[NA]	[NA]	[NA]	<1
Total +ve Xylenes	mg/kg	[NA]	[NA]	[NA]	[NA]	<3
Surrogate aaa-Trifluorotoluene	%	88	86	85	83	83

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		240645-66	240645-67	240645-68	240645-69	240645-70
Your Reference	UNITS	301/2	301A/2	303/1	303/2	304/1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
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	%	84	94	90	83	91

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		240645-71	240645-72	240645-73	240645-74	240645-75
Your Reference	UNITS	306/1	306/2	307/1	307/2	D7/JPS
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
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	%	82	84	81	86	80

svTRH (C10-C40) in Soil						
Our Reference		240645-51	240645-52	240645-53	240645-54	240645-55
Your Reference	UNITS	401/0.05	401/0.15	402/0.4	404/0.2	406/0.35
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
TRH C_{10} - C_{14}	mg/kg	<50	160	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	670	290	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	1,300	630	<100	110	<100
TRH >C_{10} -C_{16}	mg/kg	53	150	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	1,500	620	<100	140	<100
TRH >C_{34} -C_{40}	mg/kg	1,400	720	<100	150	<100
Total +ve TRH (>C10-C40)	mg/kg	3,000	1,500	<50	290	<50
Surrogate o-Terphenyl	%	103	88	83	100	96

svTRH (C10-C40) in Soil						
Our Reference		240645-56	240645-57	240645-58	240645-59	240645-60
Your Reference	UNITS	106A/0.25	106A/0.35	106A/0.5	407/0.28	411/0.01
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	83	57
TRH C_{15} - C_{28}	mg/kg	130	<100	<100	3,300	1,000
TRH C_{29} - C_{36}	mg/kg	200	<100	<100	2,600	1,800
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	180	95
TRH >C_{16} -C_{34}	mg/kg	240	<100	<100	5,300	2,100
TRH >C_{34} -C_{40}	mg/kg	460	<100	<100	1,200	2,300
Total +ve TRH (>C10-C40)	mg/kg	700	<50	<50	6,600	4,400
Surrogate o-Terphenyl	%	100	82	97	#	118

svTRH (C10-C40) in Soil						
Our Reference		240645-61	240645-62	240645-63	240645-64	240645-65
Your Reference	UNITS	412/0.15	413/0.15	D1/JPS	D3/JPS	301/1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	15/04/2020	15/04/2020
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	170	<100	<100	110
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	[NA]	[NA]	[NA]	[NA]	<50
TRH >C_{16} -C_{34}	mg/kg	<100	210	<100	<100	140
TRH >C_{34} -C_{40}	mg/kg	100	130	<100	<100	110
Total +ve TRH (>C10-C40)	mg/kg	100	340	<50	<50	240
Surrogate o-Terphenyl	%	94	101	89	82	90

svTRH (C10-C40) in Soil						
Our Reference		240645-66	240645-67	240645-68	240645-69	240645-70
Your Reference	UNITS	301/2	301A/2	303/1	303/2	304/1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
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	270	<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	180	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	140	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	320	<50	<50	<50
Surrogate o-Terphenyl	%	85	97	75	88	91

svTRH (C10-C40) in Soil						
Our Reference		240645-71	240645-72	240645-73	240645-74	240645-75
Your Reference	UNITS	306/1	306/2	307/1	307/2	D7/JPS
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	160	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	200	<100	220	<100
TRH >C_{10} -C_{16}	mg/kg	<50	69	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	69	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	260	100	200	<100
TRH >C_{34} -C_{40}	mg/kg	<100	150	<100	230	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	480	100	430	<50
Surrogate o-Terphenyl	%	82	103	106	88	99

PAHs in Soil						
Our Reference		240645-51	240645-52	240645-53	240645-54	240645-55
Your Reference	UNITS	401/0.05	401/0.15	402/0.4	404/0.2	406/0.35
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/04/2020	14/04/2020	14/04/2020	14/04/2020	16/04/2020
Date analysed	-	16/04/2020	14/04/2020	14/04/2020	14/04/2020	16/04/2020
Naphthalene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	1.2	<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	0.6	<0.1	0.1	1.3	<0.1
Anthracene	mg/kg	0.4	<0.1	<0.1	0.4	<0.1
Fluoranthene	mg/kg	8.2	0.2	0.2	2.1	<0.1
Pyrene	mg/kg	11	0.2	0.1	1.6	<0.1
Benzo(a)anthracene	mg/kg	3.7	<0.1	<0.1	0.6	<0.1
Chrysene	mg/kg	4.6	0.1	<0.1	0.5	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	11	0.4	<0.2	0.9	<0.2
Benzo(a)pyrene	mg/kg	7.6	0.2	0.06	0.56	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	8.1	0.2	<0.1	0.4	<0.1
Dibenzo(a,h)anthracene	mg/kg	2.2	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	10	0.3	<0.1	0.6	<0.1
Total +ve PAH's	mg/kg	69	1.7	0.51	9.3	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	12	<0.5	<0.5	0.8	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	12	<0.5	<0.5	0.8	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	12	<0.5	<0.5	0.9	<0.5
Surrogate p-Terphenyl-d14	%	95	75	84	81	82

PAHs in Soil						
Our Reference		240645-56	240645-57	240645-58	240645-59	240645-60
Your Reference	UNITS	106A/0.25	106A/0.35	106A/0.5	407/0.28	411/0.01
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/04/2020	16/04/2020	14/04/2020	16/04/2020	16/04/2020
Date analysed	-	16/04/2020	16/04/2020	14/04/2020	16/04/2020	16/04/2020
Naphthalene	mg/kg	<0.1	<0.1	<0.1	1.4	0.2
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	8.6	2.0
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	0.8	0.3
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	17	9.2
Anthracene	mg/kg	<0.1	<0.1	<0.1	9.8	2.2
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	110	50
Pyrene	mg/kg	<0.1	<0.1	<0.1	110	40
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	110	9.0
Chrysene	mg/kg	<0.1	<0.1	<0.1	80	9.7
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	90	13
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	90	8.5
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	40	8.4
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	3.9	2.3
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	35	7.4
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	710	160
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	120	14
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	120	14
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	120	14
Surrogate p-Terphenyl-d14	%	95	92	81	121	97

PAHs in Soil						
Our Reference		240645-61	240645-62	240645-63	240645-64	240645-65
Your Reference	UNITS	412/0.15	413/0.15	D1/JPS	D3/JPS	301/1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	0.6	<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	0.3	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	0.2	<0.1	<0.1	0.3
Pyrene	mg/kg	0.1	0.2	<0.1	<0.1	0.3
Benzo(a)anthracene	mg/kg	<0.1	0.6	<0.1	<0.1	0.2
Chrysene	mg/kg	0.1	0.5	<0.1	<0.1	0.2
Benzo(b,j+k)fluoranthene	mg/kg	0.3	3.6	<0.2	<0.2	0.6
Benzo(a)pyrene	mg/kg	0.2	2.2	<0.05	<0.05	0.3
Indeno(1,2,3-c,d)pyrene	mg/kg	0.3	3.2	<0.1	<0.1	0.3
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.9	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.3	3.9	<0.1	<0.1	0.3
Total +ve PAH's	mg/kg	1.4	16	<0.05	<0.05	2.6
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	3.9	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	3.9	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	3.9	<0.5	<0.5	0.5
Surrogate p-Terphenyl-d14	%	81	86	74	66	86

PAHs in Soil						
Our Reference		240645-66	240645-67	240645-68	240645-69	240645-70
Your Reference	UNITS	301/2	301A/2	303/1	303/2	304/1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.2	<0.1	0.2	<0.1	<0.1
Pyrene	mg/kg	0.2	<0.1	0.2	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.2	<0.1	0.1	<0.1	<0.1
Chrysene	mg/kg	0.2	<0.1	0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.5	<0.2	0.3	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.3	<0.05	0.2	0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.3	<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	0.3	<0.1	0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	2.3	<0.05	1.3	0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	86	88	87	87	85

PAHs in Soil						
Our Reference		240645-71	240645-72	240645-73	240645-74	240645-75
Your Reference	UNITS	306/1	306/2	307/1	307/2	D7/JPS
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	0.3	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	0.3	<0.1	<0.1	0.1
Benzo(a)anthracene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	1	<0.2	<0.2	0.3
Benzo(a)pyrene	mg/kg	<0.05	0.62	<0.05	<0.05	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.5	<0.1	<0.1	0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.6	<0.1	<0.1	0.1
Total +ve PAH's	mg/kg	<0.05	4.1	<0.05	<0.05	0.79
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	0.9	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	0.9	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	0.9	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	85	85	83	86	84

Organochlorine Pesticides in soil						
Our Reference		240645-1	240645-2	240645-3	240645-4	240645-5
Your Reference	UNITS	B1-1	B1-2	B1-3	B1-4	B2-1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	0.2	2.4	1.5	<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	%	71	76	80	81	83

Organochlorine Pesticides in soil						
Our Reference		240645-6	240645-7	240645-8	240645-9	240645-10
Your Reference	UNITS	B2-2	B2-3	B2-4	B3-1	B3-2
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	%	83	86	82	83	86

Organochlorine Pesticides in soil						
Our Reference		240645-11	240645-12	240645-13	240645-14	240645-15
Your Reference	UNITS	B3-3	B3-4	B4-1	B4-2	B4-3
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	80	88	85	85

Organochlorine Pesticides in soil						
Our Reference		240645-16	240645-17	240645-18	240645-19	240645-20
Your Reference	UNITS	B4-4	B5-1	B5-2	B5-3	B5-4
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	%	73	71	80	72	76

Organochlorine Pesticides in soil						
Our Reference		240645-21	240645-22	240645-23	240645-24	240645-25
Your Reference	UNITS	B6-1	B6-2	B6-3	B6-4	B7-1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	%	79	78	78	79	74

Organochlorine Pesticides in soil						
Our Reference		240645-26	240645-27	240645-28	240645-29	240645-30
Your Reference	UNITS	B7-2	B7-3	B7-4	B8-1	B8-2
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	%	74	77	75	71	73

Organochlorine Pesticides in soil						
Our Reference		240645-31	240645-32	240645-33	240645-34	240645-35
Your Reference	UNITS	B8-3	B8-4	B9-1	B9-2	B9-3
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	0.2	<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	0.2	<0.1
Surrogate TCMX	%	89	70	73	121	70

Organochlorine Pesticides in soil						
Our Reference		240645-36	240645-37	240645-38	240645-39	240645-40
Your Reference	UNITS	B9-4	B10-1	B10-2	B10-3	B10-4
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	%	75	71	69	68	72

Organochlorine Pesticides in soil						
Our Reference		240645-47	240645-48	240645-49	240645-50	240645-65
Your Reference	UNITS	D1/JRK	D2/JRK	D3/JRK	D4/JRK	301/1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	%	76	72	75	72	80

Organochlorine Pesticides in soil						
Our Reference		240645-66	240645-67	240645-68	240645-69	240645-70
Your Reference	UNITS	301/2	301A/2	303/1	303/2	304/1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	%	78	84	78	77	72

Organochlorine Pesticides in soil						
Our Reference		240645-71	240645-72	240645-73	240645-74	240645-75
Your Reference	UNITS	306/1	306/2	307/1	307/2	D7/JPS
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	%	76	77	73	76	74

Organophosphorus Pesticides in Soil						
Our Reference		240645-1	240645-2	240645-3	240645-4	240645-5
Your Reference	UNITS	B1-1	B1-2	B1-3	B1-4	B2-1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	%	71	76	80	81	83

Organophosphorus Pesticides in Soil						
Our Reference		240645-6	240645-7	240645-8	240645-9	240645-10
Your Reference	UNITS	B2-2	B2-3	B2-4	B3-1	B3-2
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	%	83	86	82	83	86

Organophosphorus Pesticides in Soil						
Our Reference		240645-11	240645-12	240645-13	240645-14	240645-15
Your Reference	UNITS	B3-3	B3-4	B4-1	B4-2	B4-3
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	80	88	85	85

Organophosphorus Pesticides in Soil						
Our Reference		240645-16	240645-17	240645-18	240645-19	240645-20
Your Reference	UNITS	B4-4	B5-1	B5-2	B5-3	B5-4
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	%	73	71	80	72	76

Organophosphorus Pesticides in Soil						
Our Reference		240645-21	240645-22	240645-23	240645-24	240645-25
Your Reference	UNITS	B6-1	B6-2	B6-3	B6-4	B7-1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	%	79	78	78	79	74

Organophosphorus Pesticides in Soil						
Our Reference		240645-26	240645-27	240645-28	240645-29	240645-30
Your Reference	UNITS	B7-2	B7-3	B7-4	B8-1	B8-2
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	%	74	77	75	71	73

Organophosphorus Pesticides in Soil						
Our Reference		240645-31	240645-32	240645-33	240645-34	240645-35
Your Reference	UNITS	B8-3	B8-4	B9-1	B9-2	B9-3
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	%	89	70	73	121	70

Organophosphorus Pesticides in Soil						
Our Reference		240645-36	240645-37	240645-38	240645-39	240645-40
Your Reference	UNITS	B9-4	B10-1	B10-2	B10-3	B10-4
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	%	75	71	69	68	72

Organophosphorus Pesticides in Soil						
Our Reference		240645-47	240645-48	240645-49	240645-50	240645-65
Your Reference	UNITS	D1/JRK	D2/JRK	D3/JRK	D4/JRK	301/1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	%	76	72	75	72	80

Organophosphorus Pesticides in Soil						
Our Reference		240645-66	240645-67	240645-68	240645-69	240645-70
Your Reference	UNITS	301/2	301A/2	303/1	303/2	304/1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	%	78	84	78	77	72

Organophosphorus Pesticides in Soil						
Our Reference		240645-71	240645-72	240645-73	240645-74	240645-75
Your Reference	UNITS	306/1	306/2	307/1	307/2	D7/JPS
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	%	76	77	73	76	74

PCBs in Soil						
Our Reference		240645-65	240645-66	240645-67	240645-68	240645-69
Your Reference	UNITS	301/1	301/2	301A/2	303/1	303/2
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	%	80	78	84	78	77

PCBs in Soil						
Our Reference		240645-70	240645-71	240645-72	240645-73	240645-74
Your Reference	UNITS	304/1	306/1	306/2	307/1	307/2
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
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	%	72	76	77	73	76

PCBs in Soil		
Our Reference		240645-75
Your Reference	UNITS	D7/JPS
Date Sampled		07/04/2020
Type of sample		Soil
Date extracted	-	14/04/2020
Date analysed	-	14/04/2020
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate TCMX	%	74

Acid Extractable metals in soil						
Our Reference		240645-1	240645-2	240645-3	240645-4	240645-5
Your Reference	UNITS	B1-1	B1-2	B1-3	B1-4	B2-1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Lead	mg/kg	21	57	24	36	63

Acid Extractable metals in soil						
Our Reference		240645-6	240645-7	240645-8	240645-17	240645-18
Your Reference	UNITS	B2-2	B2-3	B2-4	B5-1	B5-2
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Lead	mg/kg	68	24	76	53	10

Acid Extractable metals in soil						
Our Reference		240645-19	240645-20	240645-21	240645-22	240645-23
Your Reference	UNITS	B5-3	B5-4	B6-1	B6-2	B6-3
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Lead	mg/kg	39	2	25	13	8

Acid Extractable metals in soil						
Our Reference		240645-24	240645-29	240645-30	240645-31	240645-32
Your Reference	UNITS	B6-4	B8-1	B8-2	B8-3	B8-4
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Lead	mg/kg	19	10	210	36	19

Acid Extractable metals in soil						
Our Reference		240645-48	240645-50	240645-65	240645-66	240645-67
Your Reference	UNITS	D2/JRK	D4/JRK	301/1	301/2	301A/2
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Arsenic	mg/kg	[NA]	[NA]	8	9	5
Cadmium	mg/kg	[NA]	[NA]	<0.4	<0.4	<0.4
Chromium	mg/kg	[NA]	[NA]	10	8	12
Copper	mg/kg	[NA]	[NA]	57	44	39
Lead	mg/kg	63	61	12	10	12
Mercury	mg/kg	[NA]	[NA]	<0.1	<0.1	<0.1
Nickel	mg/kg	[NA]	[NA]	20	13	11
Zinc	mg/kg	[NA]	[NA]	290	250	120
Manganese	mg/kg	[NA]	[NA]	340	260	270
Iron	mg/kg	[NA]	[NA]	20,000	17,000	10,000
Aluminium	mg/kg	[NA]	[NA]	8,600	6,700	6,600
Selenium	mg/kg	[NA]	[NA]	<2	<2	<2

Acid Extractable metals in soil						
Our Reference		240645-68	240645-69	240645-70	240645-71	240645-72
Your Reference	UNITS	303/1	303/2	304/1	306/1	306/2
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Arsenic	mg/kg	6	6	<4	6	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	3	6	5	21	15
Copper	mg/kg	8	23	19	28	50
Lead	mg/kg	2	4	6	15	16
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	7	5	18	14
Zinc	mg/kg	42	120	120	73	150
Manganese	mg/kg	67	110	91	460	320
Iron	mg/kg	4,600	8,000	6,600	23,000	18,000
Aluminium	mg/kg	1,900	3,300	3,000	18,000	11,000
Selenium	mg/kg	<2	<2	<2	<2	<2

Acid Extractable metals in soil				
Our Reference	UNITS	240645-73	240645-74	240645-75
Your Reference		307/1	307/2	D7/JPS
Date Sampled		07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020
Arsenic	mg/kg	<4	<4	11
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	38	33	11
Copper	mg/kg	16	14	52
Lead	mg/kg	7	10	8
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	40	32	15
Zinc	mg/kg	25	30	210
Manganese	mg/kg	240	270	220
Iron	mg/kg	25,000	36,000	20,000
Aluminium	mg/kg	15,000	12,000	7,000
Selenium	mg/kg	<2	<4	<2

Misc Soil - Inorg						
Our Reference		240645-51	240645-52	240645-53	240645-54	240645-55
Your Reference	UNITS	401/0.05	401/0.15	402/0.4	404/0.2	406/0.35
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference		240645-56	240645-57	240645-58	240645-59	240645-60
Your Reference	UNITS	106A/0.25	106A/0.35	106A/0.5	407/0.28	411/0.01
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference		240645-61	240645-62	240645-63	240645-64	240645-65
Your Reference	UNITS	412/0.15	413/0.15	D1/JPS	D3/JPS	301/1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference		240645-66	240645-67	240645-68	240645-69	240645-70
Your Reference	UNITS	301/2	301A/2	303/1	303/2	304/1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg						
Our Reference		240645-71	240645-72	240645-73	240645-74	240645-75
Your Reference	UNITS	306/1	306/2	307/1	307/2	D7/JPS
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Moisture						
Our Reference		240645-1	240645-2	240645-3	240645-4	240645-5
Your Reference	UNITS	B1-1	B1-2	B1-3	B1-4	B2-1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Moisture	%	9.7	11	11	15	22

Moisture						
Our Reference		240645-6	240645-7	240645-8	240645-9	240645-10
Your Reference	UNITS	B2-2	B2-3	B2-4	B3-1	B3-2
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Moisture	%	26	27	19	12	22

Moisture						
Our Reference		240645-11	240645-12	240645-13	240645-14	240645-15
Your Reference	UNITS	B3-3	B3-4	B4-1	B4-2	B4-3
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Moisture	%	22	18	26	31	19

Moisture						
Our Reference		240645-16	240645-17	240645-18	240645-19	240645-20
Your Reference	UNITS	B4-4	B5-1	B5-2	B5-3	B5-4
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Moisture	%	30	34	31	49	12

Moisture						
Our Reference		240645-21	240645-22	240645-23	240645-24	240645-25
Your Reference	UNITS	B6-1	B6-2	B6-3	B6-4	B7-1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Moisture	%	46	53	12	37	24

Moisture						
Our Reference		240645-26	240645-27	240645-28	240645-29	240645-30
Your Reference	UNITS	B7-2	B7-3	B7-4	B8-1	B8-2
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Moisture	%	27	23	56	37	62

Moisture						
Our Reference		240645-31	240645-32	240645-33	240645-34	240645-35
Your Reference	UNITS	B8-3	B8-4	B9-1	B9-2	B9-3
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Moisture	%	61	27	18	68	41

Moisture						
Our Reference		240645-36	240645-37	240645-38	240645-39	240645-40
Your Reference	UNITS	B9-4	B10-1	B10-2	B10-3	B10-4
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Moisture	%	23	17	7.3	19	16

Moisture						
Our Reference		240645-47	240645-48	240645-49	240645-50	240645-51
Your Reference	UNITS	D1/JRK	D2/JRK	D3/JRK	D4/JRK	401/0.05
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Moisture	%	26	13	24	9.2	16

Moisture						
Our Reference		240645-52	240645-53	240645-54	240645-55	240645-56
Your Reference	UNITS	401/0.15	402/0.4	404/0.2	406/0.35	106A/0.25
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Moisture	%	88	20	22	12	3.2

Moisture						
Our Reference		240645-57	240645-58	240645-59	240645-60	240645-61
Your Reference	UNITS	106A/0.35	106A/0.5	407/0.28	411/0.01	412/0.15
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Moisture	%	10	9.2	5.9	2.3	17

Moisture						
Our Reference		240645-62	240645-63	240645-64	240645-65	240645-66
Your Reference	UNITS	413/0.15	D1/JPS	D3/JPS	301/1	301/2
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Moisture	%	10	11	6.6	11	4.4

Moisture						
Our Reference		240645-67	240645-68	240645-69	240645-70	240645-71
Your Reference	UNITS	301A/2	303/1	303/2	304/1	306/1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Moisture	%	12	2.2	4.0	3.7	18

Moisture					
Our Reference		240645-72	240645-73	240645-74	240645-75
Your Reference	UNITS	306/2	307/1	307/2	D7/JPS
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	14/04/2020	14/04/2020	14/04/2020	14/04/2020
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Moisture	%	11	14	21	2.5

Asbestos ID - soils NEPM - ASB-001						
Our Reference		240645-1	240645-2	240645-3	240645-4	240645-17
Your Reference	UNITS	B1-1	B1-2	B1-3	B1-4	B5-1
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	16/04/2020	16/04/2020	16/04/2020	16/04/2020	16/04/2020
Sample mass tested	g	714.84	729.17	723.2	719.26	812.66
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		240645-18	240645-19	240645-20	240645-21	240645-22
Your Reference	UNITS	B5-2	B5-3	B5-4	B6-1	B6-2
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	16/04/2020	16/04/2020	16/04/2020	16/04/2020	16/04/2020
Sample mass tested	g	609.16	491.54	1,253.45	389.85	390.18
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		240645-23	240645-24	240645-29	240645-30	240645-31
Your Reference	UNITS	B6-3	B6-4	B8-1	B8-2	B8-3
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	16/04/2020	16/04/2020	16/04/2020	16/04/2020	16/04/2020
Sample mass tested	g	594.93	656.21	452.28	877.72	175.1
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		240645-32	240645-33	240645-34	240645-35	240645-36
Your Reference	UNITS	B8-4	B9-1	B9-2	B9-3	B9-4
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	16/04/2020	16/04/2020	16/04/2020	16/04/2020	16/04/2020
Sample mass tested	g	1,001.67	626.21	528.57	661.44	408.62
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		240645-65	240645-66	240645-67	240645-68	240645-69
Your Reference	UNITS	301/1	301/2	301A/2	303/1	303/2
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	16/04/2020	16/04/2020	16/04/2020	16/04/2020	16/04/2020
Sample mass tested	g	407.31	464.57	271.95	476.43	559.36
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		240645-70	240645-71	240645-72	240645-73	240645-74
Your Reference	UNITS	304/1	306/1	306/2	307/1	307/2
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	16/04/2020	16/04/2020	16/04/2020	16/04/2020	16/04/2020
Sample mass tested	g	652.6	488.36	568.86	476.81	435.43
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - materials						
Our Reference		240645-41	240645-42	240645-43	240645-44	240645-45
Your Reference	UNITS	F1/JRK	F2/JRK	F3/JRK	F4/JRK	F5/JRK
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	15/04/2020	15/04/2020	15/04/2020	15/04/2020	15/04/2020
Mass / Dimension of Sample	-	64x38x5mm	45x30x5mm	65x45x5mm	120x80x5mm	70x45x5mm
Sample Description	-	Grey fibre cement material	Grey fibre cement material	Brown fibre cement material	Beige fibre cement material	Beige fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected Amosite asbestos detected Crocidolite asbestos detected	Chrysotile asbestos detected Amosite asbestos detected Crocidolite asbestos detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected
Trace Analysis	-	[NT]	[NT]	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - materials		
Our Reference		240645-46
Your Reference	UNITS	F6/JRK
Date Sampled		07/04/2020
Type of sample		Material
Date analysed	-	15/04/2020
Mass / Dimension of Sample	-	70x75x5mm
Sample Description	-	Beige fibre cement material
Asbestos ID in materials	-	No asbestos detected Organic fibres detected
Trace Analysis	-	No asbestos detected

Coal Tar					
Our Reference		240645-51	240645-56	240645-59	240645-60
Your Reference	UNITS	401/0.05	106A/0.25	407/0.28	411/0.01
Date Sampled		07/04/2020	07/04/2020	07/04/2020	07/04/2020
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	20/04/2020	20/04/2020	20/04/2020	20/04/2020
Date analysed	-	20/04/2020	20/04/2020	20/04/2020	20/04/2020
Presence of Coal Tar*	-	Absent	Absent	Absent	Absent

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. **NOTE** #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF) **NOTE** #2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
AT-008	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
Inorg-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-021	Determination of Mercury by Cold Vapour AAS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.

Method ID	Methodology Summary
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-012/017	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS.
Org-012/017	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS and/or GC-MS/MS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-012/017	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.
RTA T542	Determination of Phenol in core samples as per RTA test method T542. This procedure gives and indication of whether a sample of asphalt has been made with coal tar. The coal tar method gives an approximate result with a high degree of uncertainty.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	240645-52
Date extracted	-			14/04/2020	51	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			15/04/2020	51	15/04/2020	15/04/2020		15/04/2020	15/04/2020
TRH C_6 - C_9	mg/kg	25	Org-016	<25	51	<25	<25	0	90	77
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	51	<25	<25	0	90	77
Benzene	mg/kg	0.2	Org-016	<0.2	65	<0.2	<0.2	0	80	68
Toluene	mg/kg	0.5	Org-016	<0.5	65	<0.5	<0.5	0	85	72
Ethylbenzene	mg/kg	1	Org-016	<1	65	<1	<1	0	94	83
m+p-xylene	mg/kg	2	Org-016	<2	65	<2	<2	0	95	82
o-Xylene	mg/kg	1	Org-016	<1	65	<1	<1	0	95	82
naphthalene	mg/kg	1	Org-014	<1	65	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	88	51	91	88	3	93	82

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	240645-66
Date extracted	-			[NT]	65	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			[NT]	65	15/04/2020	15/04/2020		15/04/2020	15/04/2020
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	65	<25	<25	0	90	90
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	65	<25	<25	0	90	90
Benzene	mg/kg	0.2	Org-016	[NT]	75	<0.2	<0.2	0	80	78
Toluene	mg/kg	0.5	Org-016	[NT]	75	<0.5	<0.5	0	84	82
Ethylbenzene	mg/kg	1	Org-016	[NT]	75	<1	<1	0	94	96
m+p-xylene	mg/kg	2	Org-016	[NT]	75	<2	<2	0	95	97
o-Xylene	mg/kg	1	Org-016	[NT]	75	<1	<1	0	96	97
naphthalene	mg/kg	1	Org-014	[NT]	75	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	65	83	79	5	90	92

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	75	14/04/2020	14/04/2020		[NT]	[NT]
Date analysed	-			[NT]	75	15/04/2020	15/04/2020		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	[NT]	75	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	[NT]	75	<25	<25	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	75	80	90	12	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	240645-52
Date extracted	-			14/04/2020	51	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			14/04/2020	51	14/04/2020	14/04/2020		14/04/2020	14/04/2020
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	51	<50	<50	0	100	85
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	51	670	660	2	83	85
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	51	1300	1500	14	108	92
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	51	53	54	2	100	85
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	51	1500	1600	6	83	85
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	51	1400	1700	19	108	92
Surrogate o-Terphenyl	%		Org-003	79	51	103	109	6	96	86

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	240645-66
Date extracted	-			[NT]	65	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			[NT]	65	15/04/2020	15/04/2020		15/04/2020	15/04/2020
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	65	<50	<50	0	87	95
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	65	<100	<100	0	70	77
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	65	110	<100	10	91	74
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	65	<50	<50	0	87	95
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	65	140	110	24	70	77
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	65	110	<100	10	91	74
Surrogate o-Terphenyl	%		Org-003	[NT]	65	90	84	7	81	88

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	75	14/04/2020	14/04/2020		[NT]	[NT]
Date analysed	-			[NT]	75	15/04/2020	15/04/2020		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	[NT]	75	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	[NT]	75	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	[NT]	75	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	[NT]	75	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	[NT]	75	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	[NT]	75	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-003	[NT]	75	99	108	9	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	240645-52
Date extracted	-			14/04/2020	51	16/04/2020	16/04/2020		14/04/2020	14/04/2020
Date analysed	-			14/04/2020	51	16/04/2020	16/04/2020		14/04/2020	14/04/2020
Naphthalene	mg/kg	0.1	Org-012/017	<0.1	51	0.2	<0.1	67	78	84
Acenaphthylene	mg/kg	0.1	Org-012/017	<0.1	51	1.2	1.7	34	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012/017	<0.1	51	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012/017	<0.1	51	<0.1	<0.1	0	88	74
Phenanthrene	mg/kg	0.1	Org-012/017	<0.1	51	0.6	0.2	100	94	62
Anthracene	mg/kg	0.1	Org-012/017	<0.1	51	0.4	0.6	40	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012/017	<0.1	51	8.2	3.2	88	84	74
Pyrene	mg/kg	0.1	Org-012/017	<0.1	51	11	4.4	86	78	68
Benzo(a)anthracene	mg/kg	0.1	Org-012/017	<0.1	51	3.7	2.4	43	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012/017	<0.1	51	4.6	3.4	30	100	77
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012/017	<0.2	51	11	10	10	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012/017	<0.05	51	7.6	7.5	1	70	72
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012/017	<0.1	51	8.1	11	30	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012/017	<0.1	51	2.2	2.8	24	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012/017	<0.1	51	10	13	26	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	93	51	95	96	1	90	73

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	240645-66
Date extracted	-			[NT]	65	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			[NT]	65	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Naphthalene	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	84	82
Acenaphthylene	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	84	80
Phenanthrene	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	96	92
Anthracene	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012/017	[NT]	65	0.3	0.2	40	88	85
Pyrene	mg/kg	0.1	Org-012/017	[NT]	65	0.3	0.3	0	84	81
Benzo(a)anthracene	mg/kg	0.1	Org-012/017	[NT]	65	0.2	0.2	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012/017	[NT]	65	0.2	0.2	0	106	109
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012/017	[NT]	65	0.6	0.5	18	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012/017	[NT]	65	0.3	0.3	0	82	65
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012/017	[NT]	65	0.3	0.2	40	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012/017	[NT]	65	0.3	0.3	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	[NT]	65	86	85	1	91	83

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	75	14/04/2020	14/04/2020		[NT]	[NT]
Date analysed	-			[NT]	75	14/04/2020	14/04/2020		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	0.3	100	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-012/017	[NT]	75	0.1	0.3	100	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	0.2	67	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	0.2	67	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012/017	[NT]	75	0.3	0.5	50	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012/017	[NT]	75	0.2	0.3	40	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012/017	[NT]	75	0.1	0.2	67	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012/017	[NT]	75	0.1	0.2	67	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	[NT]	75	84	87	4	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	240645-2
Date extracted	-			14/04/2020	1	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			14/04/2020	1	14/04/2020	14/04/2020		14/04/2020	14/04/2020
alpha-BHC	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	86	90
HCB	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	88	94
gamma-BHC	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	82	90
delta-BHC	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	98	100
Heptachlor Epoxide	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	94	104
gamma-Chlordane	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	90	100
Dieldrin	mg/kg	0.1	Org-012/017	<0.1	1	0.1	0.1	0	96	98
Endrin	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	76	102
Endosulfan II	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	80	92
Endrin Aldehyde	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	74	94
Methoxychlor	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	82	1	71	77	8	81	78

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	240645-22
Date extracted	-			[NT]	11	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			[NT]	11	14/04/2020	14/04/2020		14/04/2020	14/04/2020
alpha-BHC	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	114	130
HCB	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	78	92
gamma-BHC	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	67	66
delta-BHC	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	101	104
Heptachlor Epoxide	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	95	104
gamma-Chlordane	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	95	104
Dieldrin	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	97	110
Endrin	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	71	88
Endosulfan II	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	64	74
Endrin Aldehyde	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	67	88
Methoxychlor	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	11	87	84	4	80	75

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	240645-66
Date extracted	-			[NT]	21	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			[NT]	21	14/04/2020	14/04/2020		14/04/2020	14/04/2020
alpha-BHC	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	82	82
HCB	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	70	80
gamma-BHC	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	60	86
delta-BHC	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	96	94
Heptachlor Epoxide	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	92	88
gamma-Chlordane	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	92	90
Dieldrin	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	98	96
Endrin	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	68	84
Endosulfan II	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	62	64
Endrin Aldehyde	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	72	68
Methoxychlor	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	21	79	81	2	77	77

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	65	14/04/2020	14/04/2020		[NT]	[NT]
Date analysed	-			[NT]	65	14/04/2020	14/04/2020		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	65	80	78	3	[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]	75	14/04/2020	14/04/2020		[NT]	[NT]
Date analysed	-			[NT]	75	14/04/2020	14/04/2020		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	75	74	77	4	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	240645-2
Date extracted	-			14/04/2020	1	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			14/04/2020	1	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Dichlorvos	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	76	84
Dimethoate	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	82	96
Fenitrothion	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	62	82
Malathion	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	70	114
Chlorpyriphos	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	90	104
Parathion	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	74	110
Bromophos-ethyl	mg/kg	0.1	AT-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	66	110
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-012/017	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	82	1	71	77	8	81	78

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	240645-22
Date extracted	-			[NT]	11	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			[NT]	11	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Dichlorvos	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	80	82
Dimethoate	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	90	100
Fenitrothion	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	73	86
Malathion	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	86	112
Chlorpyriphos	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	100	114
Parathion	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	87	88
Bromophos-ethyl	mg/kg	0.1	AT-008	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	93	112
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-012/017	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	11	87	84	4	80	75

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	240645-66
Date extracted	-			[NT]	21	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			[NT]	21	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Dichlorvos	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	80	72
Dimethoate	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	86	84
Fenitrothion	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	76	70
Malathion	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	90	86
Chlorpyriphos	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	98	94
Parathion	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	98	92
Bromophos-ethyl	mg/kg	0.1	AT-008	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	92	94
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-012/017	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	21	79	81	2	77	77

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	65	14/04/2020	14/04/2020		[NT]	[NT]
Date analysed	-			[NT]	65	14/04/2020	14/04/2020		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	AT-008	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-012/017	[NT]	65	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	65	80	78	3	[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]	75	14/04/2020	14/04/2020		[NT]	[NT]
Date analysed	-			[NT]	75	14/04/2020	14/04/2020		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	AT-008	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-012/017	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-012/017	[NT]	75	74	77	4	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	240645-66
Date extracted	-			14/04/2020	65	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			14/04/2020	65	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	65	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	65	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	65	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	65	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	65	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	65	<0.1	<0.1	0	120	120
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	65	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	82	65	80	78	3	81	77

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	75	14/04/2020	14/04/2020		[NT]	[NT]
Date analysed	-			[NT]	75	14/04/2020	14/04/2020		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-006	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-006	[NT]	75	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-006	[NT]	75	74	77	4	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	240645-2
Date prepared	-			14/04/2020	1	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			15/04/2020	1	15/04/2020	15/04/2020		15/04/2020	15/04/2020
Arsenic	mg/kg	4	Metals-020	<4	65	8	10	22	107	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	65	<0.4	<0.4	0	99	[NT]
Chromium	mg/kg	1	Metals-020	<1	65	10	11	10	113	[NT]
Copper	mg/kg	1	Metals-020	<1	65	57	67	16	112	[NT]
Lead	mg/kg	1	Metals-020	<1	1	21	22	5	110	79
Mercury	mg/kg	0.1	Metals-021	<0.1	65	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	<1	65	20	19	5	104	[NT]
Zinc	mg/kg	1	Metals-020	<1	65	290	300	3	114	[NT]
Manganese	mg/kg	1	Metals-020	<1	65	340	340	0	101	[NT]
Iron	mg/kg	10	Metals-020	<10	65	20000	23000	14	122	[NT]
Aluminium	mg/kg	10	Metals-020	<10	65	8600	8600	0	94	[NT]
Selenium	mg/kg	2	Metals-020	<2	65	<2	<2	0	101	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	240645-22
Date prepared	-			[NT]	21	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			[NT]	21	15/04/2020	15/04/2020		15/04/2020	15/04/2020
Arsenic	mg/kg	4	Metals-020	[NT]	75	11	15	31	104	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	75	<0.4	<0.4	0	103	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	75	11	12	9	109	[NT]
Copper	mg/kg	1	Metals-020	[NT]	75	52	43	19	104	[NT]
Lead	mg/kg	1	Metals-020	[NT]	21	25	26	4	115	96
Mercury	mg/kg	0.1	Metals-021	[NT]	75	<0.1	<0.1	0	83	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	75	15	11	31	107	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	75	210	190	10	112	[NT]
Manganese	mg/kg	1	Metals-020	[NT]	75	220	180	20	99	[NT]
Iron	mg/kg	10	Metals-020	[NT]	75	20000	16000	22	117	[NT]
Aluminium	mg/kg	10	Metals-020	[NT]	75	7000	5300	28	94	[NT]
Selenium	mg/kg	2	Metals-020	[NT]	75	<2	<2	0	96	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	240645-66
Date prepared	-			[NT]	65	14/04/2020	14/04/2020		[NT]	14/04/2020
Date analysed	-			[NT]	65	15/04/2020	15/04/2020		[NT]	15/04/2020
Lead	mg/kg	1	Metals-020	[NT]	65	12	13	8	[NT]	94
Arsenic	mg/kg	4	Metals-020	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]	99
Cadmium	mg/kg	0.4	Metals-020	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]	85
Chromium	mg/kg	1	Metals-020	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]	99
Copper	mg/kg	1	Metals-020	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]	129
Mercury	mg/kg	0.1	Metals-021	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]	89
Nickel	mg/kg	1	Metals-020	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]	101
Zinc	mg/kg	1	Metals-020	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]	#
Manganese	mg/kg	1	Metals-020	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]	#
Iron	mg/kg	10	Metals-020	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]	#
Aluminium	mg/kg	10	Metals-020	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]	#
Selenium	mg/kg	2	Metals-020	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]	90

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	75	14/04/2020	14/04/2020		[NT]	[NT]
Date analysed	-			[NT]	75	15/04/2020	15/04/2020		[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	75	8	10	22	[NT]	[NT]

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	240645-52
Date prepared	-			14/04/2020	51	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			14/04/2020	51	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	51	<5	<5	0	100	100

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	240645-66
Date prepared	-			[NT]	65	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Date analysed	-			[NT]	65	14/04/2020	14/04/2020		14/04/2020	14/04/2020
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	[NT]	65	<5	<5	0	100	103

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	75	14/04/2020	14/04/2020		[NT]	[NT]
Date analysed	-			[NT]	75	14/04/2020	14/04/2020		[NT]	[NT]
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	[NT]	75	<5	<5	0	[NT]	[NT]

Result Definitions

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

Quality Control Definitions

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

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

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

8 metals in soil:
- The PQL has been raised for Selenium due to interferences from analytes (other than those being tested) in sample 240645-74.
-# Percent recovery is not possible to report due to the high concentration of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

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.

Note: All samples analysed as received. However, samples 240645-21, 22, 29, 31, 36, 65, 66, 67, 68, 69, 73, 74 are below the minimum 500mL sample volume as per National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013.

PAHs in Soil - The RPD for duplicate results is accepted due to the non homogenous nature of sample 240645-51.

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CERTIFICATE OF ANALYSIS 240645-A

Client Details

Client	Douglas Partners Newcastle
Attention	Paulo Sebastian
Address	Box 324 Hunter Region Mail Centre, Newcastle, NSW, 2310

Sample Details

Your Reference	**91601.03, Muswellbrook**
Number of Samples	69 Soil, 6 Material
Date samples received	09/04/2020
Date completed instructions received	24/04/2020

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	01/05/2020
Date of Issue	30/04/2020

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

Results Approved By
Loren Bardwell, Senior Chemist
Steven Luong, Organics Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

Metals in TCLP USEPA1311			
Our Reference		240645-A-30	240645-A-62
Your Reference	UNITS	B8-2	413/0.15
Date Sampled		07/04/2020	07/04/2020
Type of sample		Soil	Soil
Date extracted	-	27/04/2020	27/04/2020
Date analysed	-	27/04/2020	27/04/2020
pH of soil for fluid# determ.	pH units	9.1	7.9
pH of soil TCLP (after HCl)	pH units	1.8	1.8
Extraction fluid used	-	1	1
pH of final Leachate	pH units	5.0	5.0
Lead in TCLP	mg/L	<0.03	[NA]

PAHs in TCLP (USEPA 1311)		
Our Reference		240645-A-62
Your Reference	UNITS	413/0.15
Date Sampled		07/04/2020
Type of sample		Soil
Date extracted	-	27/04/2020
Date analysed	-	27/04/2020
Naphthalene in TCLP	mg/L	<0.001
Acenaphthylene in TCLP	mg/L	<0.001
Acenaphthene in TCLP	mg/L	<0.001
Fluorene in TCLP	mg/L	<0.001
Phenanthrene in TCLP	mg/L	<0.001
Anthracene in TCLP	mg/L	<0.001
Fluoranthene in TCLP	mg/L	<0.001
Pyrene in TCLP	mg/L	<0.001
Benzo(a)anthracene in TCLP	mg/L	<0.001
Chrysene in TCLP	mg/L	<0.001
Benzo(bjk)fluoranthene in TCLP	mg/L	<0.002
Benzo(a)pyrene in TCLP	mg/L	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	<0.001
Total +ve PAH's	mg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	80

PAHs in water leach		
Our Reference		240645-A-62
Your Reference	UNITS	413/0.15
Date Sampled		07/04/2020
Type of sample		Soil
Date extracted	-	27/04/2020
Date analysed	-	27/04/2020
pH of final Leachate	pH units	7.3
Naphthalene in ASLP	mg/L	<0.001
Acenaphthylene in ASLP	mg/L	<0.001
Acenaphthene in ASLP	mg/L	<0.001
Fluorene in ASLP	mg/L	<0.001
Phenanthrene in ASLP	mg/L	<0.001
Anthracene in ASLP	mg/L	<0.001
Fluoranthene in ASLP	mg/L	<0.001
Pyrene in ASLP	mg/L	<0.001
Benzo(a)anthracene in ASLP	mg/L	<0.001
Chrysene in ASLP	mg/L	<0.001
Benzo(bjk)fluoranthene in ASLP	mg/L	<0.002
Benzo(a)pyrene in ASLP	mg/L	<0.001
Indeno(1,2,3-c,d)pyrene - ASLP	mg/L	<0.001
Dibenzo(a,h)anthracene in ASLP	mg/L	<0.001
Benzo(g,h,i)perylene in ASLP	mg/L	<0.001
Surrogate p-Terphenyl-d_{14}	%	89

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.
Org-022/025	Leachates are extracted with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025 ASLP	ASLP Leachates are extracted with Dichloromethane and analysed by GC-MS/GC-MSMS.

QUALITY CONTROL: Metals in TCLP USEPA1311						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			27/04/2020	[NT]	[NT]	[NT]	[NT]	27/04/2020	[NT]
Date analysed	-			27/04/2020	[NT]	[NT]	[NT]	[NT]	27/04/2020	[NT]
Lead in TCLP	mg/L	0.03	Metals-020 ICP-AES	<0.03	[NT]	[NT]	[NT]	[NT]	91	[NT]

QUALITY CONTROL: PAHs in TCLP (USEPA 1311)					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			27/04/2020	[NT]	[NT]	[NT]	[NT]	27/04/2020	[NT]
Date analysed	-			27/04/2020	[NT]	[NT]	[NT]	[NT]	27/04/2020	[NT]
Naphthalene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	108	[NT]
Acenaphthylene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	100	[NT]
Phenanthrene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	102	[NT]
Anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	106	[NT]
Pyrene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	114	[NT]
Benzo(a)anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	102	[NT]
Benzo(bjk)fluoranthene in TCLP	mg/L	0.002	Org-022/025	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	92	[NT]
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	96	[NT]	[NT]	[NT]	[NT]	95	[NT]

QUALITY CONTROL: PAHs in water leach						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			27/04/2020	[NT]	[NT]	[NT]	[NT]	27/04/2020	[NT]
Date analysed	-			27/04/2020	[NT]	[NT]	[NT]	[NT]	27/04/2020	[NT]
Naphthalene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	108	[NT]
Acenaphthylene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	100	[NT]
Phenanthrene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	102	[NT]
Anthracene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	106	[NT]
Pyrene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	114	[NT]
Benzo(a)anthracene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	102	[NT]
Benzo(bjk)fluoranthene in ASLP	mg/L	0.002	Org-022/025 ASLP	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	92	[NT]
Indeno(1,2,3-c,d)pyrene - ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d_{14}	%		Org-022/025 ASLP	96	[NT]	[NT]	[NT]	[NT]	95	[NT]

Result Definitions

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

Quality Control Definitions

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

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

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.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2012239**	Page	: 1 of 8
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR PAULO SEBASTIAN	Contact	: Customer Services ES
Address	: PO BOX 472 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 1685	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 49609600	Telephone	: +61-2-8784 8555
Project	: 91601.03	Date Samples Received	: 09-Apr-2020 11:35
Order number	: 150084	Date Analysis Commenced	: 15-Apr-2020
C-O-C number	: ----	Issue Date	: 17-Apr-2020 21:17
Sampler	: ----		
Site	: Muswellbrook		
Quote number	: EN/222		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
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ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. 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*
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	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.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	T1/JPS	T2/JPS	T2/JRK	T3/JRK	----
				Client sampling date / time	07-Apr-2020 00:00	07-Apr-2020 00:00	07-Apr-2020 00:00	07-Apr-2020 00:00	----
Compound	CAS Number	LOR	Unit		ES2012239-001	ES2012239-002	ES2012239-003	ES2012239-004	--------
					Result	Result	Result	Result	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		9.8	8.0	23.5	8.2	----
EG005(ED093)T: Total Metals by ICP-AES									
Aluminium	7429-90-5	50	mg/kg		----	6370	----	----	----
Iron	7439-89-6	50	mg/kg		----	20100	----	----	----
Manganese	7439-96-5	5	mg/kg		----	245	----	----	----
Selenium	7782-49-2	5	mg/kg		----	<5	----	----	----
Arsenic	7440-38-2	5	mg/kg		----	22	----	----	----
Cadmium	7440-43-9	1	mg/kg		----	<1	----	----	----
Chromium	7440-47-3	2	mg/kg		----	13	----	----	----
Copper	7440-50-8	5	mg/kg		----	50	----	----	----
Lead	7439-92-1	5	mg/kg		----	11	----	72	----
Nickel	7440-02-0	2	mg/kg		----	14	----	----	----
Zinc	7440-66-6	5	mg/kg		----	246	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		----	<0.1	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	<0.1	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Aldrin	309-00-2	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
4.4`-DDE	72-55-9	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Endrin	72-20-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	T1/JPS	T2/JPS	T2/JRK	T3/JRK	----
				Client sampling date / time	07-Apr-2020 00:00	07-Apr-2020 00:00	07-Apr-2020 00:00	07-Apr-2020 00:00	----
Compound	CAS Number	LOR	Unit		ES2012239-001	ES2012239-002	ES2012239-003	ES2012239-004	--------
					Result	Result	Result	Result	----
EP068A: Organochlorine Pesticides (OC) - Continued									
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
4.4`-DDD	72-54-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
4.4`-DDT	50-29-3	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Diazinon	333-41-5	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
Malathion	121-75-5	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Fenthion	55-38-9	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Parathion	56-38-2	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Ethion	563-12-2	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	T1/JPS	T2/JPS	T2/JRK	T3/JRK	----
				Client sampling date / time	07-Apr-2020 00:00	07-Apr-2020 00:00	07-Apr-2020 00:00	07-Apr-2020 00:00	----
Compound	CAS Number	LOR	Unit		ES2012239-001	ES2012239-002	ES2012239-003	ES2012239-004	--------
					Result	Result	Result	Result	----
EP075(SIM)A: Phenolic Compounds - Continued									
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	----	----	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	----	----	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	----	----	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	----	----	----
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									
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	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	T1/JPS	T2/JPS	T2/JRK	T3/JRK	----
				Client sampling date / time	07-Apr-2020 00:00	07-Apr-2020 00:00	07-Apr-2020 00:00	07-Apr-2020 00:00	----
Compound	CAS Number	LOR	Unit		ES2012239-001	ES2012239-002	ES2012239-003	ES2012239-004	--------
					Result	Result	Result	Result	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
^ 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	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	76.4	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	104	98.2	96.3	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	107	107	100	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		83.1	86.2	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		81.0	86.0	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		48.7	80.8	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		90.6	104	----	----	----
Anthracene-d10	1719-06-8	0.5	%		90.5	94.4	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		91.3	102	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	T1/JPS	T2/JPS	T2/JRK	T3/JRK	----
				Client sampling date / time	07-Apr-2020 00:00	07-Apr-2020 00:00	07-Apr-2020 00:00	07-Apr-2020 00:00	----
Compound	CAS Number	LOR	Unit		ES2012239-001	ES2012239-002	ES2012239-003	ES2012239-004	--------
					Result	Result	Result	Result	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**107**	**109**	----	----	----
Toluene-D8	2037-26-5	0.2	%		**115**	**123**	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		**100**	**112**	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
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

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2012239**	Page	: 1 of 12
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR PAULO SEBASTIAN	Contact	: Customer Services ES
Address	: PO BOX 472 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 1685	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 49609600	Telephone	: +61-2-8784 8555
Project	: 91601.03	Date Samples Received	: 09-Apr-2020
Order number	: 150084	Date Analysis Commenced	: 15-Apr-2020
C-O-C number	: ----	Issue Date	: 17-Apr-2020
Sampler	: ----		
Site	: Muswellbrook		
Quote number	: EN/222		
No. of samples received	: 4		
No. of samples analysed	: 4		

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. 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*
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	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	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 2968500)									
ES2012370-047	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	22	20	8.09	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	13	14	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	10	12	12.9	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	16	17	7.25	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	19	19	0.00	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	1380	1300	6.16	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	37	38	0.00	No Limit
		EG005T: Aluminium	7429-90-5	50	mg/kg	10300	10700	4.18	0% - 20%
		EG005T: Iron	7439-89-6	50	mg/kg	44600	41200	7.84	0% - 20%
ES2012239-002	T2/JPS	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	13	12	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	14	13	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	22	22	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	50	41	20.1	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	11	11	0.00	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	245	244	0.00	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	246	213	14.4	0% - 20%
		EG005T: Aluminium	7429-90-5	50	mg/kg	6370	5740	10.4	0% - 20%
		EG005T: Iron	7439-89-6	50	mg/kg	20100	19000	5.66	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2968503)									
ES2012370-002	Anonymous	EA055: Moisture Content	----	0.1	%	6.2	2.8	74.8	No Limit
ES2012370-055	Anonymous	EA055: Moisture Content	----	0.1	%	19.3	19.6	1.49	0% - 50%

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2969712)									
ES2012141-001	Anonymous	EA055: Moisture Content	----	0.1	%	15.3	12.8	17.5	0% - 20%
ES2012381-010	Anonymous	EA055: Moisture Content	----	0.1	%	14.6	14.6	0.00	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2968501)									
ES2012370-051	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES2012239-002	T2/JPS	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2968516)									
ES2012401-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES2012239-002	T2/JPS	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2968515)									
ES2012401-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	0.08	0.08	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
ES2012239-002	T2/JPS	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2968515) - continued									
ES2012239-002	T2/JPS	EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2968515)									
ES2012401-001	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
ES2012239-002	T2/JPS	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2968515) - continued									
ES2012239-002	T2/JPS	EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 2968513)									
ES2012401-001	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.00	No Limit
ES2012239-002	T2/JPS	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2968513)									
ES2012401-001	Anonymous	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
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2968513) - continued									
ES2012401-001	Anonymous	EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	2.5	2.1	15.3	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	0.7	0.6	21.4	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	6.7	6.4	4.45	0% - 50%
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	6.7	6.4	4.61	0% - 50%
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	3.6	3.1	15.2	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	3.3	3.2	3.46	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	4.7	4.5	4.12	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	1.7	1.8	10.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	3.2	3.1	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	2.0	2.0	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	2.4	2.4	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	38.0	36.1	5.13	0% - 20%
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	4.4	4.3	3.68	No Limit
ES2012239-002	T2/JPS	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
		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: 2968028)									
ES2012239-001	T1/JPS	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES2012401-008	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2968514)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2968514) - continued									
ES2012401-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	180	170	7.26	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	160	190	13.8	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES2012239-002	T2/JPS	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 Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2968028)									
ES2012239-001	T1/JPS	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES2012401-008	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2968514)									
ES2012401-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	280	280	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
ES2012239-002	T2/JPS	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: BTEXN (QC Lot: 2968028)									
ES2012239-001	T1/JPS	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
		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
ES2012401-008	Anonymous	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
		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 Spike (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 Spike (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 (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2968500)								
EG005T: Aluminium	7429-90-5	50	mg/kg	<50	6134 mg/kg	98.4	70.0	130
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	97.9	86.0	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	93.5	83.0	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	84.9	76.0	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	92.6	86.0	120
EG005T: Iron	7439-89-6	50	mg/kg	<50	8400 mg/kg	75.0	70.0	130
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	93.7	80.0	114
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	96.7	85.0	117
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	94.9	87.0	123
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	94.4	75.0	131
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	101	80.0	122
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2968501)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	79.6	70.0	105
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2968516)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	83.8	62.0	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 2968515)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	83.8	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	83.5	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	88.1	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	78.8	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	88.0	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	79.7	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	87.9	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	80.6	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	80.4	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	82.2	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	81.3	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	80.7	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	77.8	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	77.8	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	81.4	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	86.5	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	96.0	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.8	62.0	124

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 2968515) - continued								
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	80.7	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	79.1	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	78.2	54.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2968515)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	76.2	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	87.6	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	93.0	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	100	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	90.4	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	81.3	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	78.1	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	87.2	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	82.4	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	81.5	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	78.6	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	79.0	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	74.5	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	80.7	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	87.8	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	106	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	78.0	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	81.8	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	76.2	41.0	123
EP075(SIM)A: Phenolic Compounds (QCLot: 2968513)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	89.5	71.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	88.7	72.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	89.3	71.0	123
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	93.1	67.0	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	77.2	54.0	114
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	93.2	68.0	126
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	90.9	66.0	120
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	93.9	70.0	120
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	91.7	70.0	116
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	74.5	54.0	114
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	79.5	60.0	114
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	24.7	10.0	57.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2968513)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	92.9	77.0	125

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2968513) - continued								
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	93.8	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	90.8	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	91.8	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	94.1	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	92.7	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	95.7	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	97.9	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	97.3	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	91.7	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	98.6	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	97.6	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	91.8	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	87.5	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	80.7	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	89.4	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2968028)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	107	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2968514)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	103	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	94.3	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	101	71.0	129
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2968028)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	112	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2968514)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	96.6	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	90.4	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	88.0	63.0	131
EP080: BTEXN (QCLot: 2968028)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	106	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	110	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	109	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	110	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	109	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	94.5	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**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2968500)							
ES2012239-002	T2/JPS	EG005T: Arsenic	7440-38-2	50 mg/kg	120	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	110	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	108	70.0	130
		EG005T: Copper	7440-50-8	250 mg/kg	108	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	110	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	114	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	95.6	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2968501)							
ES2012239-002	T2/JPS	EG035T: Mercury	7439-97-6	5 mg/kg	97.8	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2968516)							
ES2012239-002	T2/JPS	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	102	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2968515)							
ES2012239-002	T2/JPS	EP068: gamma-BHC	58-89-9	0.5 mg/kg	111	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	80.8	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	81.6	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	93.4	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	107	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	86.1	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2968515)							
ES2012239-002	T2/JPS	EP068: Diazinon	333-41-5	0.5 mg/kg	85.1	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	83.2	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	95.0	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	95.5	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	98.1	70.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 2968513)							
ES2012239-002	T2/JPS	EP075(SIM): Phenol	108-95-2	10 mg/kg	90.0	70.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	84.1	70.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	78.0	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	82.3	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	43.9	20.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2968513)							
ES2012239-002	T2/JPS	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	82.6	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	90.9	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2968028)							
ES2012239-001	T1/JPS	EP080: C6 - C9 Fraction	----	32.5 mg/kg	121	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2968514)							
ES2012239-002	T2/JPS	EP071: C10 - C14 Fraction	----	523 mg/kg	79.8	73.0	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	110	53.0	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	107	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2968028)							
ES2012239-001	T1/JPS	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	119	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2968514)							
ES2012239-002	T2/JPS	EP071: >C10 - C16 Fraction	----	860 mg/kg	104	73.0	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	119	53.0	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	108	52.0	132
EP080: BTEXN (QCLot: 2968028)							
ES2012239-001	T1/JPS	EP080: Benzene	71-43-2	2.5 mg/kg	106	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	105	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	103	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	101	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	100.0	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	78.6	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2012239**	Page	: 1 of 5
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR PAULO SEBASTIAN	Telephone	: +61-2-8784 8555
Project	: 91601.03	Date Samples Received	: 09-Apr-2020
Site	: Muswellbrook	Issue Date	: 17-Apr-2020
Sampler	: ----	No. of samples received	: 4
Order number	: 150084	No. of samples analysed	: 4

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)							
T1/JPS, T2/JPS, T2/JRK, T3/JRK	**07-Apr-2020**	**----**	----	----	**15-Apr-2020**	21-Apr-2020	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
T2/JPS, T3/JRK	**07-Apr-2020**	**15-Apr-2020**	04-Oct-2020	✓	**15-Apr-2020**	04-Oct-2020	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
T2/JPS	**07-Apr-2020**	**15-Apr-2020**	05-May-2020	✓	**16-Apr-2020**	05-May-2020	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066)							
T2/JPS	**07-Apr-2020**	**15-Apr-2020**	21-Apr-2020	✓	**16-Apr-2020**	25-May-2020	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
T2/JPS, T2/JRK, T3/JRK	**07-Apr-2020**	**15-Apr-2020**	21-Apr-2020	✓	**16-Apr-2020**	25-May-2020	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068)							
T2/JPS, T2/JRK, T3/JRK	**07-Apr-2020**	**15-Apr-2020**	21-Apr-2020	✓	**16-Apr-2020**	25-May-2020	✓
EP075(SIM)A: Phenolic Compounds							
Soil Glass Jar - Unpreserved (EP075(SIM))							
T1/JPS, T2/JPS	**07-Apr-2020**	**15-Apr-2020**	21-Apr-2020	✓	**16-Apr-2020**	25-May-2020	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
T1/JPS, T2/JPS	**07-Apr-2020**	**15-Apr-2020**	21-Apr-2020	✓	**16-Apr-2020**	25-May-2020	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP071)							
T1/JPS, T2/JPS	**07-Apr-2020**	**15-Apr-2020**	21-Apr-2020	✓	**15-Apr-2020**	25-May-2020	✓
Soil Glass Jar - Unpreserved (EP080)							
T1/JPS, T2/JPS	**07-Apr-2020**	**15-Apr-2020**	21-Apr-2020	✓	**16-Apr-2020**	21-Apr-2020	✓

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP071)								
T1/JPS,	T2/JPS	**07-Apr-2020**	**15-Apr-2020**	21-Apr-2020	✓	**15-Apr-2020**	25-May-2020	✓
Soil Glass Jar - Unpreserved (EP080)								
T1/JPS,	T2/JPS	**07-Apr-2020**	**15-Apr-2020**	21-Apr-2020	✓	**16-Apr-2020**	21-Apr-2020	✓
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080)								
T1/JPS,	T2/JPS	**07-Apr-2020**	**15-Apr-2020**	21-Apr-2020	✓	**16-Apr-2020**	21-Apr-2020	✓

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	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	12	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	**10.00**	**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	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**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	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**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	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**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	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	**5.88**	**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 (2013) Schedule B(3) Section 6.1 and Table 1 (14 day holding time).
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 (2013) 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 (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270E Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504)
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270E Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 504,505)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM amended 2013.
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270E. 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 (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260D. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM amended 2013.

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 (2013) Schedule B(3) (Method 202)
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.

Table B1: Summary of Laboratory Results – Buildings B1 to B5 campared to Landuse Criteria

			Metals	OCP																	OPP	Complete OCP suite											Complete OPP suite			
			Lead	DDT+DDE+DDD c	DDD	DDE	DDT	Aldrin & Dieldrin	Total Chlordane	alpha-chlordane	gamma-Chlordane	Total Endosulfan	Endosulfan I	Endosulfan II	Endosulfan Sulphate	Endrin	Heptachlor	Hexachlorobenzene	Methoxychlor	Chlorpyriphos	alpha-BHC	beta-BHC	Bromophos-ethyl	Chlorpyriphos-methyl	delta-BHC	Diazinon	Dimethoate	Endrin Aldehyde	Lindane	Heptachlor Epoxide	Azinphos methyl (Guthion)	Ethion	Fenitrothion	Ronnel (fenchlorphos)
		PQL	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sample ID	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
B1-1	0 - 0.05 m	07/04/2020	21	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
B1-2	0 - 0.05 m	07/04/2020	57	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
D4/JRK	0 - 0.05 m	07/04/2020	61	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
T3/JRK	0 - 0.05 m	07/04/2020	72	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	NT	NT	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NT	<0.05	<0.05	NT	NT	<0.05
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
B1-3	0 - 0.05 m	07/04/2020	24	<0.1	<0.1	<0.1	<0.1	2.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
B1-4	0 - 0.05 m	07/04/2020	36	<0.1	<0.1	<0.1	<0.1	1.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
B2-1	0 - 0.05 m	07/04/2020	63	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
B2-2	0 - 0.05 m	07/04/2020	68	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
B2-3	0 - 0.05 m	07/04/2020	24	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
B2-4	0 - 0.05 m	07/04/2020	76	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
B3-1	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
B3-2	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
B3-3	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
B3-4	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
B4-1	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
D1/JRK	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
B4-2	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
B4-3	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
B4-4	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
B5-1	0 - 0.05 m	07/04/2020	53	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
D2/JRK	0 - 0.05 m	07/04/2020	63	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
B5-2	0 - 0.05 m	07/04/2020	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
B5-3	0 - 0.05 m	07/04/2020	39	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
B5-4	0 - 0.05 m	07/04/2020	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
			300 1100	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC

Lab result

HIL/HSL value EIL/ESL value

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

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

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

Notes:

HIL/HSL/DC	NEPC, Schedule B1 - HIL A (undefined), HSL A/B (undefined), DC HSL A (undefined)
EIL/ESL	NEPC, Schedule B1 - EIL UR/POS (undefined), ESL UR/POS (undefined)
ML	NEPC, Schedule B1 - ML R/P/POS (undefined)
a	QA/QC replicate of sample listed directly below the primary sample
b	reported naphthalene laboratory result obtained from BTEXN suite
c	criteria applies to DDT only
d	various PQLs for triplicate results

Table B2: Summary of Laboratory Results – Buildings B6 to B10 compared to Landuse Criteria

			Metals	OCP																	OPP	Complete OCP suite											Complete OPP suite			
			Lead	DDT+DDE+DDD c	DDD	DDE	DDT	Aldrin & Dieldrin	Total Chlordane	alpha-chlordane	gamma-Chlordane	Total Endosulfan	Endosulfan I	Endosulfan II	Endosulfan Sulphate	Endrin	Heptachlor	Hexachlorobenzene	Methoxychlor	Chlorpyriphos	alpha-BHC	beta-BHC	Bromophos-ethyl	Chlorpyriphos-methyl	delta-BHC	Diazinon	Dimethoate	Endrin Aldehyde	Lindane	Heptachlor Epoxide	Azinphos methyl (Guthion)	Ethion	Fenitrothion	Ronnel (fenchlorphos)
		PQL	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sample ID	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
B6-1	0 - 0.05 m	07/04/2020	25 300 1100	<0.1 240 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC
B6-2	0 - 0.05 m	07/04/2020	13 300 1100	<0.1 240 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC
B6-3	0 - 0.05 m	07/04/2020	8 300 1100	<0.1 240 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC
B6-4	0 - 0.05 m	07/04/2020	19 300 1100	<0.1 240 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC
B7-1	0 - 0.05 m	07/04/2020	NT 300 1100	<0.1 240 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC
B7-2	0 - 0.05 m	07/04/2020	NT 300 1100	<0.1 240 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC
B7-3	0 - 0.05 m	07/04/2020	NT 300 1100	<0.1 240 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC
B7-4	0 - 0.05 m	07/04/2020	NT 300 1100	<0.1 240 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC
D3/JRK	0 - 0.05 m	07/04/2020	NT 300 1100	<0.1 240 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC
T2/JRK	0 - 0.05 m	07/04/2020	NT 300 1100	<0.05 240 180	<0.05 NC NC	<0.05 NC NC	<0.2 NC 180	<0.05 6 NC	<0.05 50 NC	NT NC NC	NT NC NC	<0.05 270 NC	<0.05 NC NC	<0.05 NC NC	<0.05 NC NC	<0.05 10 NC	<0.05 6 NC	<0.05 10 NC	<0.2 300 NC	<0.05 160 NC	<0.05 NC NC	<0.05 NC NC	<0.05 NC NC	<0.05 NC NC	<0.05 NC NC	<0.05 NC NC	<0.05 NC NC	<0.05 NC NC	NT NC NC	<0.05 NC NC	<0.05 NC NC	NT NC NC	NT NC NC
B8-1	0 - 0.05 m	07/04/2020	10 300 1100	<0.1 240 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC
B8-2	0 - 0.05 m	07/04/2020	210 300 1100	<0.1 240 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC
B8-3	0 - 0.05 m	07/04/2020	36 300 1100	<0.1 240 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC
B8-4	0 - 0.05 m	07/04/2020	19 300 1100	<0.1 240 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC
B9-1	0 - 0.05 m	07/04/2020	NT 300 1100	<0.1 240 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC
B9-2	0 - 0.05 m	07/04/2020	NT 300 1100	0.2 240 180	<0.1 NC NC	0.2 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC
B9-3	0 - 0.05 m	07/04/2020	NT 300 1100	<0.1 240 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC
B9-4	0 - 0.05 m	07/04/2020	NT 300 1100	<0.1 240 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC
B10-1	0 - 0.05 m	07/04/2020	NT 300 1100	<0.1 240 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC
B10-2	0 - 0.05 m	07/04/2020	NT 300 1100	<0.1 240 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC
B10-3	0 - 0.05 m	07/04/2020	NT 300 1100	<0.1 240 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC
B10-4	0 - 0.05 m	07/04/2020	NT 300 1100	<0.1 240 180	<0.1 NC NC	<0.1 NC NC	<0.1 NC 180	<0.1 6 NC	<0.1 50 NC	<0.1 NC NC	<0.1 NC NC	<0.1 270 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 10 NC	<0.1 6 NC	<0.1 10 NC	<0.1 300 NC	<0.1 160 NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC	<0.1 NC NC

Lab result
HIL/HSL value EIL/ESL value

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

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

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

Notes:

HIL/HSL/DC	NEPC, Schedule B1 - HIL A (undefined), HSL A/B (undefined), DC HSL A (undefined)
EIL/ESL	NEPC, Schedule B1 - EIL UR/POS (undefined), ESL UR/POS (undefined)
ML	NEPC, Schedule B1 - ML R/P/POS (undefined)
a	QA/QC replicate of sample listed directly below the primary sample
b	reported naphthalene laboratory result obtained from BTEXN suite
c	criteria applies to DDT only
d	various PQLs for triplicate results

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Table B3: Summary of Laboratory Results – Access Path and Stockpiles compared to Landuse Criteria

				Metals									TRH						BTEX				PAH				Coal Tar
				Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	Manganese	TRH C6 - C10	TRH >C10-C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene [b]	Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ	Total PAHs	Coal Tar ID
			PQL	4	0.4	1	1	1	0.1	1	1	1	25	50	25	50	100	100	0.2	0.5	1	1	0.1	0.05	0.5	0.05	-
Sample ID	Sampling area	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
401/0.05	Access track	0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	<25	53	<25	NT	1500	1400	NT	NT	NT	NT	0.2	7.6	12	69	Absent
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
401/0.15	Access track	0.15 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	<25	150	<25	NT	620	720	NT	NT	NT	NT	<0.1	0.2	<0.5	1.7	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
D1/JPS	Access track	-	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	<25	<50	<25	NT	<100	<100	NT	NT	NT	NT	<0.1	<0.05	<0.5	<0.05	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
402/0.4	Access track	0.4 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	<25	<50	<25	NT	<100	<100	NT	NT	NT	NT	<0.1	0.06	<0.5	0.51	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
404/0.2	Access track	0.2 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	<25	<50	<25	NT	140	150	NT	NT	NT	NT	<0.1	0.56	0.8	9.3	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
406/0.35	Access track	0.35 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	<25	<50	<25	NT	<100	<100	NT	NT	NT	NT	<0.1	<0.05	<0.5	<0.05	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
D3/JPS	Access track	-	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	<25	<50	<25	NT	<100	<100	NT	NT	NT	NT	<0.1	<0.05	<0.5	<0.05	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
T1/JPS	Access track	-	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	<10	<50	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
106A/0.25	Access track	0.25 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	<25	<50	<25	NT	240	460	NT	NT	NT	NT	<0.1	<0.05	<0.5	<0.05	Absent
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
106A/0.35	Access track	0.35 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	<25	<50	<25	NT	<100	<100	NT	NT	NT	NT	<0.1	<0.05	<0.5	<0.05	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
106A/0.5	Access track	0.5 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	<25	<50	<25	NT	<100	<100	NT	NT	NT	NT	<0.1	<0.05	<0.5	<0.05	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
407/0.28	Access track	0.28 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	<25	180	<25	NT	3400	1200	NT	NT	NT	NT	1.4	90	120	710	Absent
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
411/0.01	Access track	0.01 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	<25	95	<25	NT	2100	2300	NT	NT	NT	NT	0.2	8.5	14	160	Absent
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
412/0.15	Access track	0.15 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	<25	<50	<25	NT	<100	100	NT	NT	NT	NT	<0.1	0.2	<0.5	1.4	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
413/0.15	Access track	0.15 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	<25	<50	<25	NT	210	130	NT	NT	NT	NT	<0.1	2.2	3.9	16	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
301/1	Stockpile	-	07/04/2020	8	<0.4	10	57	12	<0.1	20	290	340	<25	<50	<25	<50	140	110	<0.2	<0.5	<1	<1	<1	0.3	<0.5	2.6	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
301/2	Stockpile	-	07/04/2020	9	<0.4	8	44	10	<0.1	13	250	260	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.3	<0.5	2.3	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
301A/2	Stockpile	-	07/04/2020	5	<0.4	12	39	12	<0.1	11	120	270	<25	<50	<25	<50	180	140	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
303/1	Stockpile	-	07/04/2020	6	<0.4	3	8	2	<0.1	3	42	67	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.2	<0.5	1.3	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
303/2	Stockpile	-	07/04/2020	6	<0.4	6	23	4	<0.1	7	120	110	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.05	<0.5	0.05	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
D7/JPS	Stockpile	-	07/04/2020	11	<0.4	11	52	8	<0.1	15	210	220	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.2	<0.5	0.79	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
T2/JPS	Stockpile	-	07/04/2020	22	<1	13	50	11	<0.1	14	246	245	<10	<50	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
304/1	Stockpile	-	07/04/2020	<4	<0.4	5	19	6	<0.1	5	120	91	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
306/1	Stockpile	-	07/04/2020	6	<0.4	21	28	15	<0.1	18	73	460	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
306/2	Stockpile	-	07/04/2020	6	<0.4	15	50	16	<0.1	14	150	320	<25	69	<25	69	260	150	<0.2	<0.5	<1	<1	<1	0.62	0.9	4.1	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
307/1	Stockpile	-	07/04/2020	<4	<0.4	38	16	7	<0.1	40	25	240	<25	<50	<25	<50	100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	
307/2	Stockpile	-	07/04/2020	<4	<0.4	33	14	10	<0.1	32	30	270	<25	<50	<25	<50	200	230	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	NT
				100 100	20 NC	100 410	6000 55	300 1100	40 NC	400 35	7400 150	3800 NC	NC NC	NC NC	45 180	110 120	NC 300	NC 2800	0.5 50	160 85	55 70	40 105	3 170	NC 33	3 NC	300 NC	

Lab result
HIL/HSL value
EIL/ESL value

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

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

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

Notes:

HIL/HSL/DC	NEPC, Schedule B1 - HIL A (undefined), HSL A/B (undefined), DC HSL A (undefined)
EIL/ESL	NEPC, Schedule B1 - EIL UR/POS (undefined), ESL UR/POS (undefined)
ML	NEPC, Schedule B1 - ML R/P/POS (undefined)
a	QA/QC replicate of sample listed directly below the primary sample
b	reported naphthalene laboratory result obtained from BTEXN suite
c	criteria applies to DDT only
d	various PQLs for triplicate results

Table B3: Summary of Laboratory Results – Access Path and Stockpiles campared to Landuse Criteria (continued)

				Phenol	OCP																	OPP	PCB								
				Phenol	DDT+DDE+DDD c	DDD	DDE	DDT	Aldrin & Dieldrin	Total Chlordane	alpha-chlordane	gamma-Chlordane	Total Endosulfan	Endosulfan I	Endosulfan II	Endosulfan Sulphate	Endrin	Heptachlor	Hexachlorobenzene	Methoxychlor	Chlorpyriphos	Arochlor 1016	Total PCB	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Aroclor 1260
			PQL	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sample ID	Sampling area	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
401/0.05	Access track	0.05 m	07/04/2020	<5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
401/0.15	Access track	0.15 m	07/04/2020	<5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
D1/JPS	Access track	-	07/04/2020	<5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
402/0.4	Access track	0.4 m	07/04/2020	<5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
404/0.2	Access track	0.2 m	07/04/2020	<5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
406/0.35	Access track	0.35 m	07/04/2020	<5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
D3/JPS	Access track	-	07/04/2020	<5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
T1/JPS	Access track	-	07/04/2020	<0.5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
106A/0.25	Access track	0.25 m	07/04/2020	<5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
106A/0.35	Access track	0.35 m	07/04/2020	<5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
106A/0.5	Access track	0.5 m	07/04/2020	<5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
407/0.28	Access track	0.28 m	07/04/2020	<5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
411/0.01	Access track	0.01 m	07/04/2020	<5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
412/0.15	Access track	0.15 m	07/04/2020	<5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
413/0.15	Access track	0.15 m	07/04/2020	<5	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
301/1	Stockpile	-	07/04/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
301/2	Stockpile	-	07/04/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
301A/2	Stockpile	-	07/04/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
303/1	Stockpile	-	07/04/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
303/2	Stockpile	-	07/04/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
D7/JPS	Stockpile	-	07/04/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
T2/JPS	Stockpile	-	07/04/2020	<0.5	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	NT	NT	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	NT	<0.1	NT	NT	NT	NT	NT	NT
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
304/1	Stockpile	-	07/04/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
306/1	Stockpile	-	07/04/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
306/2	Stockpile	-	07/04/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
307/1	Stockpile	-	07/04/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC
307/2	Stockpile	-	07/04/2020	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
				100 NC	240 180	NC NC	NC NC	NC 180	6 NC	50 NC	NC NC	NC NC	270 NC	NC NC	NC NC	NC NC	10 NC	6 NC	10 NC	300 NC	160 NC	NC NC	1 NC	NC NC	NC NC	NC NC	NC NC	NC NC	NC NC

Lab result
HIL/HSL value EIL/ESL value

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

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

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

Notes:

HIL/HSL/DC	NEPC, Schedule B1 - HIL A (undefined), HSL A/B (undefined), DC HSL A (undefined)
EIL/ESL	NEPC, Schedule B1 - EIL UR/POS (undefined), ESL UR/POS (undefined)
ML	NEPC, Schedule B1 - ML R/P/POS (undefined)
a	QA/QC replicate of sample listed directly below the primary sample
b	reported naphthalene laboratory result obtained from BTEXN suite
c	criteria applies to DDT only
d	various PQLs for triplicate results

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Table B3: Summary of Laboratory Results – Access Path and Stockpiles compared to Landuse Criteria (continued)

				Additional metals			Complete PAH suite												TRH					Complete OCP suite										Complete OPP suite			
				Aluminium	Iron	Selenium (Total)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(g,h,i)perylene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	TRH C6 - C9	TRH C10 - C14	TRH C15 - C28	TRH C29 - C36	C10-C36 recoverable hydrocarbons	alpha-BHC	beta-BHC	Bromophos-ethyl	Chlorpyriphos-methyl	delta-BHC	Diazinon	Dimethoate	Endrin Aldehyde	Lindane	Heptachlor Epoxide	Azinphos methyl (Guthion)	Ethion	Fenitrothion	Ronnel (fenchlorphos)
			PQL	10	10	2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	25	50	100	100	50	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sample ID	Sampling area	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
401/0.05	Access track	0.05 m	07/04/2020	NT	NT	NT	<0.1	1.2	0.4	3.7	10	4.6	2.2	8.2	<0.1	8.1	0.6	11	<25	<50	670	1300	1970	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
401/0.15	Access track	0.15 m	07/04/2020	NT	NT	NT	<0.1	<0.1	<0.1	<0.1	0.3	0.1	<0.1	0.2	<0.1	0.2	<0.1	0.2	<25	160	290	630	1080	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
D1/JPS	Access track	-	07/04/2020	NT	NT	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
402/0.4	Access track	0.4 m	07/04/2020	NT	NT	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	0.1	0.1	<25	<50	<100	<100	<50	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
404/0.2	Access track	0.2 m	07/04/2020	NT	NT	NT	<0.1	0.1	0.4	0.6	0.6	0.5	<0.1	2.1	0.1	0.4	1.3	1.6	<25	<50	<100	110	110	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
406/0.35	Access track	0.35 m	07/04/2020	NT	NT	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
D3/JPS	Access track	-	07/04/2020	NT	NT	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
T1/JPS	Access track	-	07/04/2020	NT	NT	NT	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
106A/0.25	Access track	0.25 m	07/04/2020	NT	NT	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	130	200	330	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
106A/0.35	Access track	0.35 m	07/04/2020	NT	NT	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
106A/0.5	Access track	0.5 m	07/04/2020	NT	NT	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
407/0.28	Access track	0.28 m	07/04/2020	NT	NT	NT	<0.1	8.6	9.8	110	35	80	3.9	110	0.8	40	17	110	<25	83	3300	2600	5983	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
411/0.01	Access track	0.01 m	07/04/2020	NT	NT	NT	0.1	2	2.2	9	7.4	9.7	2.3	50	0.3	8.4	9.2	40	<25	57	1000	1800	2857	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
412/0.15	Access track	0.15 m	07/04/2020	NT	NT	NT	<0.1	<0.1	<0.1	<0.1	0.3	0.1	<0.1	0.1	<0.1	0.3	<0.1	0.1	<25	<50	<100	<100	<50	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
413/0.15	Access track	0.15 m	07/04/2020	NT	NT	NT	<0.1	0.6	0.3	0.6	3.9	0.5	0.9	0.2	<0.1	3.2	<0.1	0.2	<25	<50	100	170	270	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
301/1	Stockpile	-	07/04/2020	8600	20000	<2	<0.1	<0.1	<0.1	0.2	0.3	0.2	<0.1	0.3	<0.1	0.3	<0.1	0.3	<25	<50	<100	110	110	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
301/2	Stockpile	-	07/04/2020	6700	17000	<2	<0.1	<0.1	<0.1	0.2	0.3	0.2	0.1	0.2	<0.1	0.3	<0.1	0.2	<25	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
301A/2	Stockpile	-	07/04/2020	6600	10000	<2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	270	270	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
303/1	Stockpile	-	07/04/2020	1900	4600	<2	<0.1	<0.1	<0.1	0.1	0.1	0.1	<0.1	0.2	<0.1	0.1	<0.1	0.2	<25	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
303/2	Stockpile	-	07/04/2020	3300	8000	<2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
D7/JPS	Stockpile	-	07/04/2020	7000	20000	<2	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.1	<25	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
T2/JPS	Stockpile	-	07/04/2020	6370	20100	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NT	<0.05	<0.05	<0.05	NT	NT
304/1	Stockpile	-	07/04/2020	3000	6600	<2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
306/1	Stockpile	-	07/04/2020	18000	23000	<2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
306/2	Stockpile	-	07/04/2020	11000	18000	<2	<0.1	0.1	<0.1	0.2	0.6	0.2	0.1	0.3	<0.1	0.5	<0.1	0.3	<25	<50	160	200	360	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
307/1	Stockpile	-	07/04/2020	15000	25000	<2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
307/2	Stockpile	-	07/04/2020	12000	36000	<4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	220	220	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

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 below the PQL, refer to the lab report **Blue** = DC exceedance

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

Notes:

HIL/HSL/DC	NEPC, Schedule B1 - HIL A (undefined), HSL A/B (undefined), DC HSL A (undefined)
EIL/ESL	NEPC, Schedule B1 - EIL UR/POS (undefined), ESL UR/POS (undefined)
ML	NEPC, Schedule B1 - ML R/P/POS (undefined)
a	QA/QC replicate of sample listed directly below the primary sample
b	reported naphthalene laboratory result obtained from BTEXN suite
c	criteria applies to DDT only
d	various PQLs for triplicate results

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Table B4: Summary of Laboratory Results – Buildings B1 to B5 compared to Waste Classification Criteria

			Metals	OCP																				OPP								
			Lead	HCB	alpha-BHC	gamma-BHC	beta-BHC	Heptachlor	delta-BHC	Aldrin	Heptachlor Epoxide	gamma-Chlordane	alpha-chlordane	Endosulfan I	DDE	Dieldrin	Endrin	DDD	Endosulfan II	DDT	Endrin Aldehyde	Endosulfan Sulphate	Total Endosulfan	Total Analysed OCP	Chlorpyriphos	Chlorpyriphos-methyl	Parathion	Dichlorvos	Dimethoate	Ethion	Fenitrothion	Malathion	Total Analysed OPP
		PQL	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sample ID	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
B1-1	0 - 0.05 m	07/04/2020	21	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B1-2	0 - 0.05 m	07/04/2020	57	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
D4/JRK	0 - 0.05 m	07/04/2020	61	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
T3/JRK	0 - 0.05 m	07/04/2020	72	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NT	NT	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	NT	<0.05	<0.05
B1-3	0 - 0.05 m	07/04/2020	24	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B1-4	0 - 0.05 m	07/04/2020	36	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B2-1	0 - 0.05 m	07/04/2020	63	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B2-2	0 - 0.05 m	07/04/2020	68	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B2-3	0 - 0.05 m	07/04/2020	24	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B2-4	0 - 0.05 m	07/04/2020	76	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B3-1	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B3-2	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B3-3	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B3-4	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B4-1	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
D1/JRK	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B4-2	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B4-3	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B4-4	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B5-1	0 - 0.05 m	07/04/2020	53	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
D2/JRK	0 - 0.05 m	07/04/2020	63	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B5-2	0 - 0.05 m	07/04/2020	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B5-3	0 - 0.05 m	07/04/2020	39	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B5-4	0 - 0.05 m	07/04/2020	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Waste Classification Criteria [f]																																		
CT1			100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	60	<50	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4
SCC1			1500	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	108	<50	7.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.5
TCLP1			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CT2			400	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	240	<50	16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16
SCC2			6000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	432	<50	30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30
TCLP2			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

NT = Not tested NC = No criteria AD = Asbestos detected NAD = No asbestos detected

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
g	Various PQLs used for triplicate results
PQL	Practical quantitation limit
CT1	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values of specific contaminant concentration (SCC) for classification without TCLP: General solid waste
SCC1	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: General solid waste
TCLP1	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: General solid waste
CT2	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values of specific contaminant concentration (SCC) for classification without TCLP: Restricted solid waste
SCC2	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: Restricted solid
TCLP2	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: Restricted solid

Table B5: Summary of Laboratory Results – Buildings B6 to B10 compared to Waste Classification Criteria

			Metals	OCP																					OPP								
			Lead	HCB	alpha-BHC	gamma-BHC	beta-BHC	Heptachlor	delta-BHC	Aldrin	Heptachlor Epoxide	gamma-Chlordane	alpha-chlordane	Endosulfan I	DDE	Dieldrin	Endrin	DDD	Endosulfan II	DDT	Endrin Aldehyde	Endosulfan Sulphate	Total Endosulfan	Total Analysed OCP	Chlorpyriphos	Chlorpyriphos-methyl	Parathion	Dichlorvos	Dimethoate	Ethion	Fenitrothion	Malathion	Total Analysed OPP
		PQL	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sample ID	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
B6-1	0 - 0.05 m	07/04/2020	25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B6-2	0 - 0.05 m	07/04/2020	13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B6-3	0 - 0.05 m	07/04/2020	8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B6-4	0 - 0.05 m	07/04/2020	19	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B7-1	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B7-2	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B7-3	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B7-4	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
D3/JRK	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
T2/JRK	0 - 0.05 m	07/04/2020	NT	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NT	NT	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	NT	<0.05	<0.05
B8-1	0 - 0.05 m	07/04/2020	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B8-2	0 - 0.05 m	07/04/2020	210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B8-3	0 - 0.05 m	07/04/2020	36	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B8-4	0 - 0.05 m	07/04/2020	19	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B9-1	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B9-2	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B9-3	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B9-4	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B10-1	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B10-2	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B10-3	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B10-4	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Waste Classification Criteria [f]																																	
CT1			100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	60	<50	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4
SCC1			1500	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	108	<50	7.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.5
TCLP1			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CT2			400	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	240	<50	16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16
SCC2			6000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	432	<50	30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30
TCLP2			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

NT = Not tested NC = No criteria AD = Asbestos detected NAD = No asbestos detected

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
g	Various PQLs used for triplicate results
PQL	Practical quantitation limit
CT1	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values of specific contaminant concentration (SCC) for classification without TCLP: General solid waste
SCC1	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: General solid waste
TCLP1	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: General solid waste
CT2	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values of specific contaminant concentration (SCC) for classification without TCLP: Restricted solid waste
SCC2	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: Restricted solid
TCLP2	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: Restricted solid

Douglas Partners
Geotechnics / Environment / Groundwater

Project 91601.03

Table B6: Summary of Laboratory Results – Assess Path and Stockpiles compared to Wate Classification Criteria

				Metals							TRH					BTEX						PAH		Phenol	OCP		OPP		PCB	Coal Tar
				Arsenic	Cadmium	Total Chromium	Lead	Mercury (inorganic)	Selenium	Nickel	TRH C6 - C9	TRH C10 - C14	TRH C15 - C28	TRH C29 - C36	C10-C36 recoverable hydrocarbons	Benzene	Toluene	Ethylbenzene	m+p-Xylene	o-Xylene	Xylenes (total)	Benzo(a)pyrene (BaP)	Total PAHs	Phenol	Total Endosulfan	Total Analysed OCP	Chlorpyriphos	Total Analysed OPP	Total PCB	Coal Tar ID
			PQL	4	0.4	1	1	0.1	2	1	25	50	100	100	50	0.2	0.5	1	2	1	3	0.05	0.05	5	0.1	0.1	0.1	0.1	0.1	-
Sample ID	Location area	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
401/0.05	Access track	0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	<25	<50	670	1300	1970	NT	NT	NT	NT	NT	NT	7.6	69	<5	NT	NT	NT	NT	NT	Absent
401/0.15	Access track	0.15 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	<25	160	290	630	1080	NT	NT	NT	NT	NT	NT	0.2	1.7	<5	NT	NT	NT	NT	NT	NT
D1/JPS	Access track	-	07/04/2020	NT	NT	NT	NT	NT	NT	NT	<25	<50	<100	<100	<50	NT	NT	NT	NT	NT	NT	<0.05	<0.05	<5	NT	NT	NT	NT	NT	NT
402/0.4	Access track	0.4 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	<25	<50	<100	<100	<50	NT	NT	NT	NT	NT	NT	0.06	0.51	<5	NT	NT	NT	NT	NT	NT
404/0.2	Access track	0.2 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	<25	<50	<100	110	110	NT	NT	NT	NT	NT	NT	0.56	9.3	<5	NT	NT	NT	NT	NT	NT
406/0.35	Access track	0.35 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	<25	<50	<100	<100	<50	NT	NT	NT	NT	NT	NT	<0.05	<0.05	<5	NT	NT	NT	NT	NT	NT
D3/JPS	Access track	-	07/04/2020	NT	NT	NT	NT	NT	NT	NT	<25	<50	<100	<100	<50	NT	NT	NT	NT	NT	NT	<0.05	<0.05	<5	NT	NT	NT	NT	NT	NT
T1/JPS	Access track	-	07/04/2020	NT	NT	NT	NT	NT	NT	NT	<10	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NT	NT	NT	NT	NT	NT
106A/0.25	Access track	0.25 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	<25	<50	130	200	330	NT	NT	NT	NT	NT	NT	<0.05	<0.05	<5	NT	NT	NT	NT	NT	Absent
106A/0.35	Access track	0.35 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	<25	<50	<100	<100	<50	NT	NT	NT	NT	NT	NT	<0.05	<0.05	<5	NT	NT	NT	NT	NT	NT
106A/0.5	Access track	0.5 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	<25	<50	<100	<100	<50	NT	NT	NT	NT	NT	NT	<0.05	<0.05	<5	NT	NT	NT	NT	NT	NT
407/0.28	Access track	0.28 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	<25	83	3300	2600	5983	NT	NT	NT	NT	NT	NT	90	710	<5	NT	NT	NT	NT	NT	Absent
411/0.01	Access track	0.01 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	<25	57	1000	1800	2857	NT	NT	NT	NT	NT	NT	8.5	160	<5	NT	NT	NT	NT	NT	Absent
412/0.15	Access track	0.15 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	<25	<50	<100	<100	<50	NT	NT	NT	NT	NT	NT	0.2	1.4	<5	NT	NT	NT	NT	NT	NT
413/0.15	Access track	0.15 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	<25	<50	100	170	270	NT	NT	NT	NT	NT	NT	2.2	16	<5	NT	NT	NT	NT	NT	NT
301/1	Stockpile	-	07/04/2020	8	<0.4	10	12	<0.1	<2	20	<25	<50	<100	110	110	<0.2	<0.5	<1	<2	<1	<3	0.3	2.6	<5	<0.1	<0.1	<0.1	<0.1	<0.1	NT
301/2	Stockpile	-	07/04/2020	9	<0.4	8	10	<0.1	<2	13	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	0.3	2.3	<5	<0.1	<0.1	<0.1	<0.1	<0.1	NT
301A/2	Stockpile	-	07/04/2020	5	<0.4	12	12	<0.1	<2	11	<25	<50	<100	270	270	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.05	<5	<0.1	<0.1	<0.1	<0.1	<0.1	NT
303/1	Stockpile	-	07/04/2020	6	<0.4	3	2	<0.1	<2	3	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	0.2	1.3	<5	<0.1	<0.1	<0.1	<0.1	<0.1	NT
303/2	Stockpile	-	07/04/2020	6	<0.4	6	4	<0.1	<2	7	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	0.05	0.05	<5	<0.1	<0.1	<0.1	<0.1	<0.1	NT
D7/JPS	Stockpile	-	07/04/2020	11	<0.4	11	8	<0.1	<2	15	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	0.2	0.79	<5	<0.1	<0.1	<0.1	<0.1	<0.1	NT
T2/JPS	Stockpile	-	07/04/2020	22	<1	13	11	<0.1	<5	14	<10	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.1	NT
304/1	Stockpile	-	07/04/2020	<4	<0.4	5	6	<0.1	<2	5	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.05	<5	<0.1	<0.1	<0.1	<0.1	<0.1	NT
306/1	Stockpile	-	07/04/2020	6	<0.4	21	15	<0.1	<2	18	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.05	<5	<0.1	<0.1	<0.1	<0.1	<0.1	NT
306/2	Stockpile	-	07/04/2020	6	<0.4	15	16	<0.1	<2	14	<25	<50	160	200	360	<0.2	<0.5	<1	<2	<1	<3	0.62	4.1	<5	<0.1	<0.1	<0.1	<0.1	<0.1	NT
307/1	Stockpile	-	07/04/2020	<4	<0.4	38	7	<0.1	<2	40	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.05	<5	<0.1	<0.1	<0.1	<0.1	<0.1	NT
307/2	Stockpile	-	07/04/2020	<4	<0.4	33	10	<0.1	<4	32	<25	<50	<100	220	220	<0.2	<0.5	<1	<2	<1	<3	<0.05	<0.05	<5	<0.1	<0.1	<0.1	<0.1	<0.1	NT
Waste Classification Criteria [f]																														
CT1				100	20	100	100	4	20	40	650	N/A	N/A	N/A	10000	10	288	600	N/A	N/A	1000	0.8	200	288	60	<50	4	4	<50	N/A
SCC1				500	100	1900	1500	50	50	1050	650	N/A	N/A	N/A	10000	18	518	1080	N/A	N/A	1800	10	200	518	108	<50	7.5	7.5	<50	N/A
TCLP1				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CT2				400	80	400	400	16	80	160	2600	N/A	N/A	N/A	40000	40	1152	2400	N/A	N/A	4000	3.2	800	1152	240	<50	16	16	<50	N/A
SCC2				2000	400	7600	6000	200	200	4200	2600	N/A	N/A	N/A	40000	72	2073	4320	N/A	N/A	7200	23	800	2073	432	<50	30	30	<50	N/A
TCLP2				N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

NT = Not tested NC = No criteria AD = Asbestos detected NAD = No asbestos detected

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
g	Various PQLs used for triplicate results
PQL	Practical quantitation limit
CT1	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values of specific contaminant concentration (SCC) for classification without TCLP: General solid waste
SCC1	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: General solid waste
TCLP1	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: General solid waste
CT2	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values of specific contaminant concentration (SCC) for classification without TCLP: Restricted solid waste
SCC2	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: Restricted solid
TCLP2	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste, Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: Restricted solid

Table B7: Laboratory Results for TCLP Testing

Sample ID	Sample Depth (m)	Fill (F) or Natural (N)	Benzo(a) Pyrene		Total PAH		Lead	
			Total	TCLP	Total	TCLP	Total	TCLP
			mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L
B8-2	0 - 0.05	F	NA	NA	NA	NA	210	<0.03
413	0.15	F	2.2	<0.001	16	NIL (+)VE	NA	NA
Laboratory PQL			0.05	0.001	0.05	NA	1	0.01
NSW EPA - General Solid Waste Guidelines - CT1			0.8 / 10*	0.04	200	NC	100 / 1500*	5
NSW EPA - Restricted Solid Waste Guidelines - CT2			3.2 / 23*	0.16	800	NC	400 / 6000*	20

Notes to Table C3:

Total concentrations in mg/kg on a dry weight basis. TCLP results in mg/L.

CT – Concentration Threshold

TCLP – Toxicity Characteristic Leaching Procedure

Shaded results exceed NSW EPA Waste Classification Guidelines for General Solid Waste considering leachability testing

* Criteria when used in conjunction with leachability (TCLP) results

NC – No Criteria

Table B8: Summary of Laboratory Results – ASLP Testing

	Sample ID			413/0.15	ANZG (2018) 95% LOP Fresh	NEPC (2013) HSL 2-4m
	Sample Date			07/04/2020		
		PQL	Units			
PAH	Acenaphthene	0.001	mg/L	<0.001		
	Acenaphthylene	0.001	mg/L	<0.001		
	Benzo(a)anthracene	0.001	mg/L	<0.001		
	Naphthalene	0.001	mg/L	<0.001	16	NL
	Benzo(a)pyrene (BaP)	0.001	mg/L	<0.001		
	Benzo(g,h,i)perylene	0.001	mg/L	<0.001		
	Chrysene	0.001	mg/L	<0.001		
	Dibenzo(a,h)anthracene	0.001	mg/L	<0.001		
	Fluoranthene	0.001	mg/L	<0.001		
	Fluorene	0.001	mg/L	<0.001		
	Indeno(1,2,3-c,d)pyrene	0.001	mg/L	<0.001		
	Phenanthrene	0.001	mg/L	<0.001		
	Pyrene	0.001	mg/L	<0.001		

Notes:

*	QA/QC duplicate of sample listed directly below the primary sample
PQL	Practical quantitation limit
-	No criterion / not defined / not tested / not applicable
	Shaded cell is exceedance of guideline value
	Where one or more guideline value is exceeded, the cell is shaded to the colour of the highest guideline value exceeded
	NEPC (2013) National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013), health screening level Sand 2-4m
	ANZG (2018) Australian and New Zealand Guidelines for Fresh and Marine Water Quality, 95% level of protection of species for Fresh aquatic ecosystems [NB: 99% level of protection adopted for bioaccumulative chemicals]
	HEPA (2018) PFAS National Environmental Management Plan, 99% level of protection for Fresh aquatic ecosystems
	NHMRC (2018) Australian Drinking Water Guidelines 6 2011, drinking water aesthetic-based criteria

Table B9: Summary of Laboratory Results – Buildings B1 to B5 - Asbestos

			Asbestos							
			Asbestos ID in soil >0.1g/kg	Trace Analysis	Asbestos ID in soil <0.1g/kg	ACM >7mm Estimation	ACM >7mm Estimation	FA and AF Estimation	FA and AF Estimation	Asbestos (500 ml)
		PQL					<0.01		<0.001	0.001
Sample ID	Depth	Sample Date	-	-	-	g	%(w/w)	g	%(w/w)	-
B1-1	0 - 0.05 m	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD
B1-2	0 - 0.05 m	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD
D4/JRK	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT
B1-3	0 - 0.05 m	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD
B1-4	0 - 0.05 m	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD
B2-1	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT
B2-2	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT
B2-3	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT
B2-4	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT
B3-1	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT
B3-2	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT
B3-3	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT
B3-4	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT
B4-1	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT
D1/JRK	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT
B4-2	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT
B4-3	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT
B4-4	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT
B5-1	0 - 0.05 m	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD
D2/JRK	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT
B5-2	0 - 0.05 m	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD
B5-3	0 - 0.05 m	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD
B5-4	0 - 0.05 m	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD

Lab result

HIL/HSL value EIL/ESL value

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

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

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

Notes:

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

Table B10: Summary of Laboratory Results – Buildings B6 to B10 - Asbestos and Fibro Fragments

			Asbestos									
			Asbestos ID in soil >0.1g/kg	Trace Analysis	Asbestos ID in soil <0.1g/kg	ACM >7mm Estimation	ACM >7mm Estimation	FA and AF Estimation	FA and AF Estimation	Asbestos (500 ml)	Asbestos ID in materials	Total Asbestos
		PQL					<0.01		<0.001	0.001		0.001
Sample ID	Depth	Sample Date	-	-	-	g	%(w/w)	g	%(w/w)	-	-	-
B6-1	0 - 0.05 m	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NT	NAD
B6-2	0 - 0.05 m	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NT	NAD
B6-3	0 - 0.05 m	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NT	NAD
B6-4	0 - 0.05 m	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NT	NAD
B7-1	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B7-2	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B7-3	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B7-4	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
D3/JRK	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B8-1	0 - 0.05 m	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NT	NAD
B8-2	0 - 0.05 m	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NT	NAD
B8-3	0 - 0.05 m	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NT	NAD
B8-4	0 - 0.05 m	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NT	NAD
B9-1	0 - 0.05 m	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NT	NAD
B9-2	0 - 0.05 m	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NT	NAD
B9-3	0 - 0.05 m	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NT	NAD
B9-4	0 - 0.05 m	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NT	NAD
B10-1	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B10-2	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B10-3	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
B10-4	0 - 0.05 m	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
F1/JRK	Surface	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	Detected	Detected
F2/JRK	Surface	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	Detected	Detected
F3/JRK	Surface	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD
F4/JRK	Surface	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD
F5/JRK	Surface	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD
F6/JRK	Surface	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NAD	NAD

Lab result
HIL/HSL value EIL/ESL value

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

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

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

Notes:

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

Table B11: Summary of Laboratory Results – Stockpiles - Asbestos

			Asbestos								
			Asbestos ID in soil >0.1g/kg	Trace Analysis	Asbestos ID in soil <0.1g/kg	ACM >7mm Estimation	ACM >7mm Estimation	FA and AF Estimation	FA and AF Estimation	Asbestos (500 ml)	Total Asbestos#1
		PQL					<0.01		<0.001	0.001	<0.1
Sample ID	Depth	Sample Date	-	-	-	g	%(w/w)	g	%(w/w)	-	g/kg
301/1	-	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NAD
301/2	-	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NAD
301A/2	-	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NAD
303/1	-	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NAD
303/2	-	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NAD
D7/JPS	-	07/04/2020	NT	NT	NT	NT	NT	NT	NT	NT	NT
304/1	-	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NAD
306/1	-	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NAD
306/2	-	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NAD
307/1	-	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NAD
307/2	-	07/04/2020	NAD	NAD	NAD	NT	NAD	NT	NAD	NAD	NAD

Lab result

HIL/HSL value EIL/ESL value

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

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

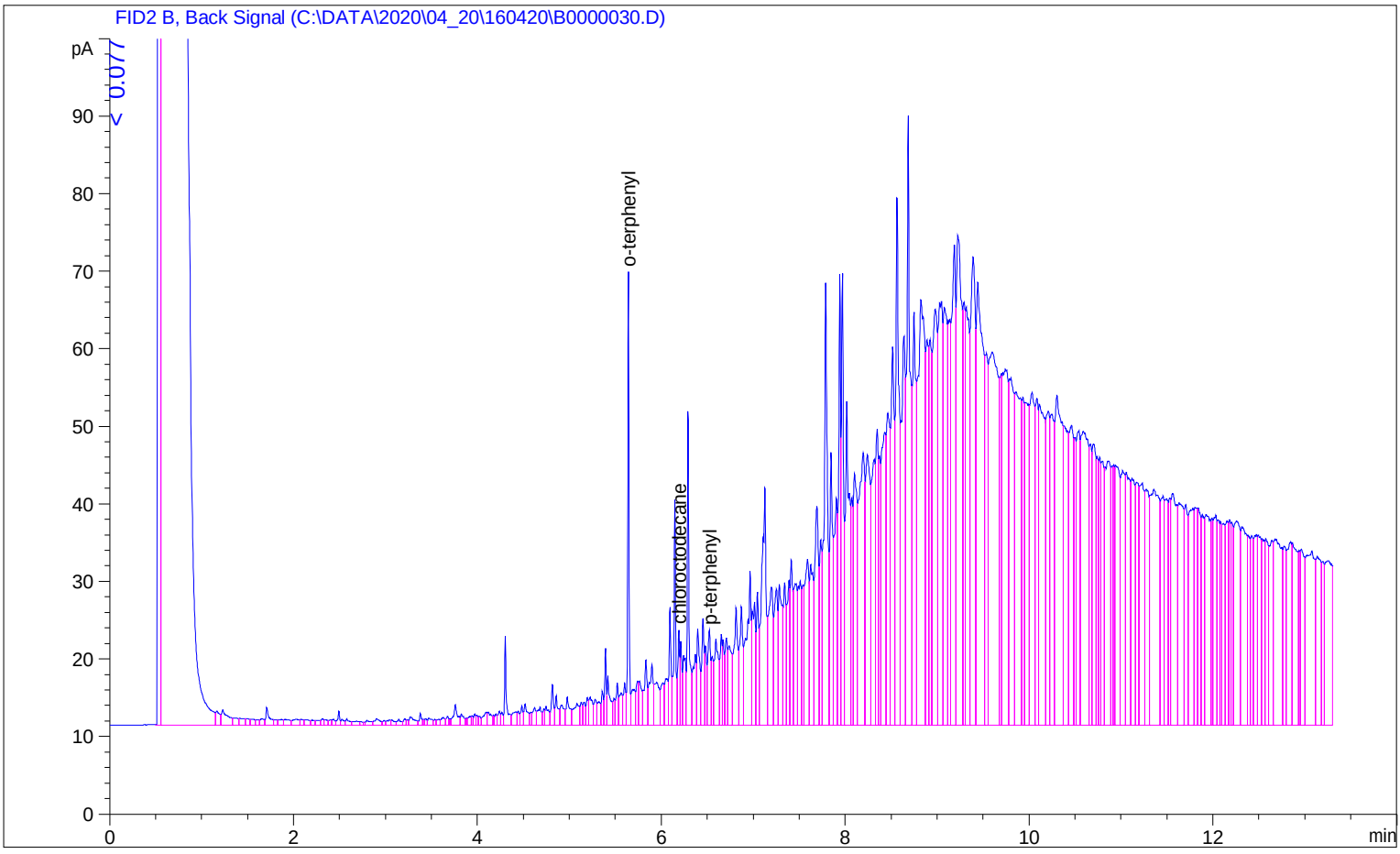
Bold = Lab detections NT = Not tested NL = Non limiting NC = No criteria NA = Not applicable NAD = No asbestos detected

Notes:

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

Data File C:\DATA\2020\04_20\160420\B0000030.D
Sample Name: s240645-51 rr

```
==========================================================================
Acq. Operator   :                                  Seq. Line :  30
Acq. Instrument : GC#4                              Location : Vial 105
Injection Date  : 17/04/2020 2:37:17 AM                  Inj :   1
                                                  Inj Volume : 1 µl
Acq. Method     : C:\CHEM32\1\METHODS\NEPM JF.M
Last changed    : 16/01/2020 11:55:46 AM
Analysis Method : C:\METHODS\2020\04_20\160420-B-PROCESSING-.M
Last changed    : 17/04/2020 9:39:40 AM
                  (modified after loading) (Current integration events modified)
Method Info     : FAST TPH WITH 15M HP5 COLUMNS
```




```
==========================================================================
                    External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      17/04/2020 9:28:40 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B, Back Signal

RetTime  Type     Area     Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                 [mg/L]
-------|------|----------|----------|----------|--|------------------
  5.644 VV    I   60.46112 1.69991e-1   10.27783    o-terphenyl
  6.191 VV        17.53691 1.97522e-1    3.46392    chloroctodecane
  6.523 VV    I   27.18202 6.95667e-2    1.89096    p-terphenyl
```

Data File C:\DATA\2020\04_20\160420\B0000030.D
Sample Name: s240645-51 rr

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [mg/L]	Grp	Name
Totals :				15.63271		

Summed Peaks Report

Signal 1: FID2 B, Back Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [mg/L]
TRH C10-C14	2.100	4.135	93.48426	17.1128
NEPM >C10-C16	2.600	4.795	144.84174	26.5140
TRH C15-C28	4.135	7.860	1956.23723	337.6113
NEPM >C16-C34	4.795	8.970	4442.58142	766.7096
TRH C29-C36	7.861	9.320	3890.50930	657.2121
NEPM >C34-C40	8.971	10.390	4184.92632	706.9470
Totals :				2512.1068

Final Summed Peaks Report

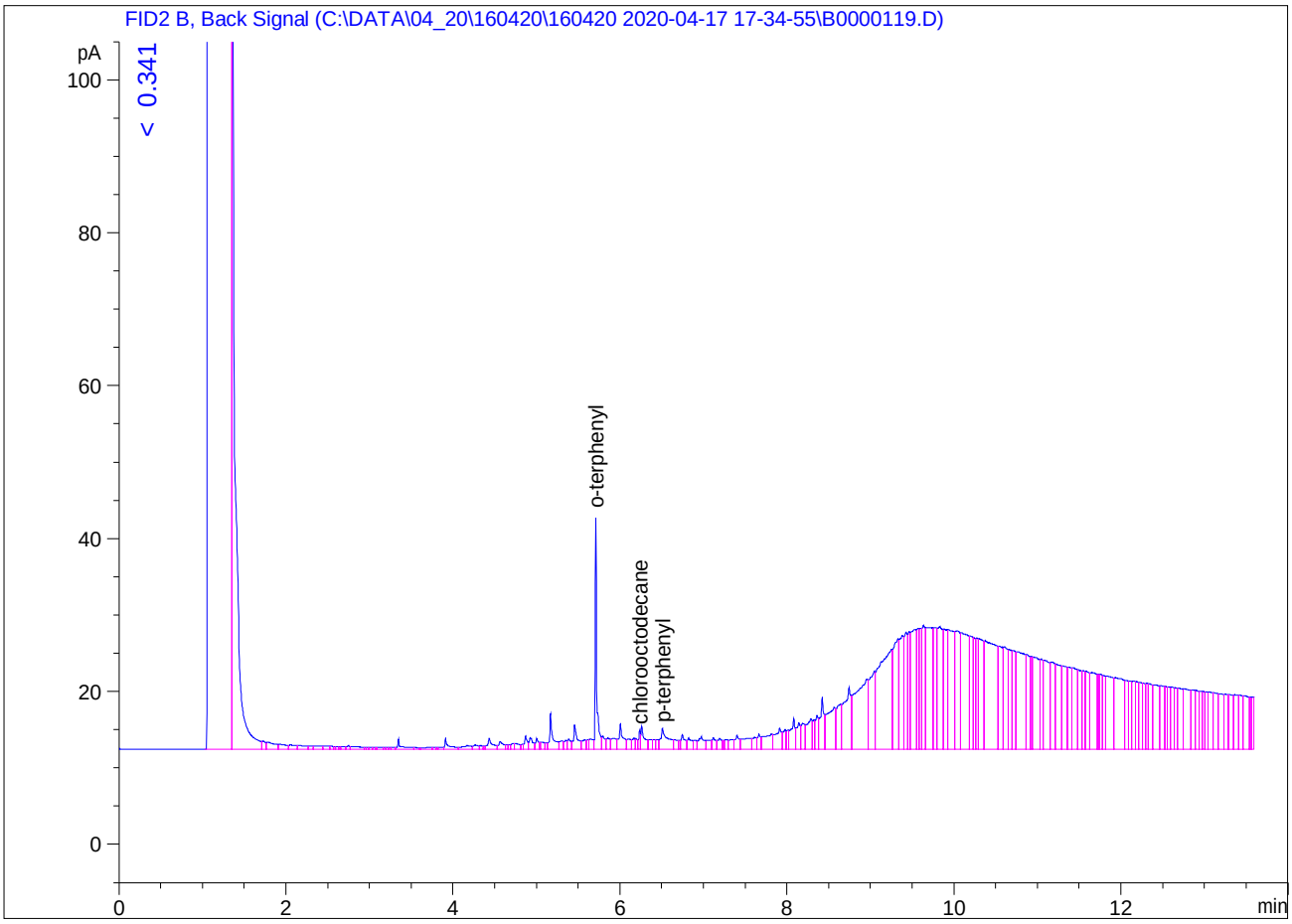
Signal 1: FID2 B, Back Signal

Name	Total Area [pA*s]	Amount [mg/L]
TRH C10-C14	93.48426	17.1128
NEPM >C10-C16	144.84174	26.5140
TRH C15-C28	1956.23723	337.6113
NEPM >C16-C34	4442.58142	766.7096
TRH C29-C36	3890.50930	657.2121
NEPM >C34-C40	4184.92632	706.9470
o-terphenyl	60.46112	10.2778
chloroctodecane	17.53691	3.4639
p-terphenyl	27.18202	1.8910
Totals :	2527.7395	

*** End of Report ***

Data File C:\DATA\04_20\160420\160420 2020-04-17 17-34-55\B0000119.D
Sample Name: s240645-56 rr

```
==========================================================================
Acq. Operator   : SYSTEM                          Seq. Line : 119
Sample Operator : SYSTEM
Acq. Instrument : GC6                             Location :   119  (B)
Injection Date  : 20-Apr-20 8:11:29 AM                 Inj :   1
                                                 Inj Volume : 1 µl
Acq. Method     : C:\DATA\04_20\160420\160420 2020-04-17 17-34-55\NEPM JF.M
Last changed    : 20-Mar-20 10:48:26 AM by SYSTEM
Analysis Method : C:\00 METHODS\2020\04_20\160420-B-PROCESSING-.M
Last changed    : 20-Apr-20 9:57:22 AM by SYSTEM
                  (modified after loading) (Current integration events modified)
Method Info     : FAST TPH WITH 15M HP5 COLUMNS
```

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==========================================================================
                     External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      17-Apr-20 11:01:56 AM
Multiplier            :      1.0000
Dilution              :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B, Back Signal

RetTime  Type     Area     Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                 [mg/L]
-------|------|----------|----------|----------|--|-----------------
  5.712 VV    I   39.00630 2.55348e-1    9.96018    o-terphenyl
  6.238 VV        3.59840 3.06552e-1    1.10310    chlorooctodecane
```

Data File C:\DATA\04_20\160420\160420 2020-04-17 17-34-55\B0000119.D
Sample Name: s240645-56 rr

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [mg/L]	Grp	Name
6.510	VV	16.53602	1.19392e-1	1.97428		p-terphenyl

Totals : 13.03756

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Summed Peaks Report

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Signal 1: FID2 B, Back Signal

Signal 1: FID2 B, Back Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [mg/L]
TRH C10-C14	2.390	4.275	37.87646	10.6249
NEPM >C10-C16	2.865	4.880	51.79475	14.5292
TRH C15-C28	4.275	7.840	237.44213	63.1439
NEPM >C16-C34	4.881	8.910	441.46283	117.4000
TRH C29-C36	7.841	9.220	373.12893	98.3739
NEPM >C34-C40	8.911	9.875	845.82122	222.9974

Totals : 527.0693

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Final Summed Peaks Report

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Signal 1: FID2 B, Back Signal

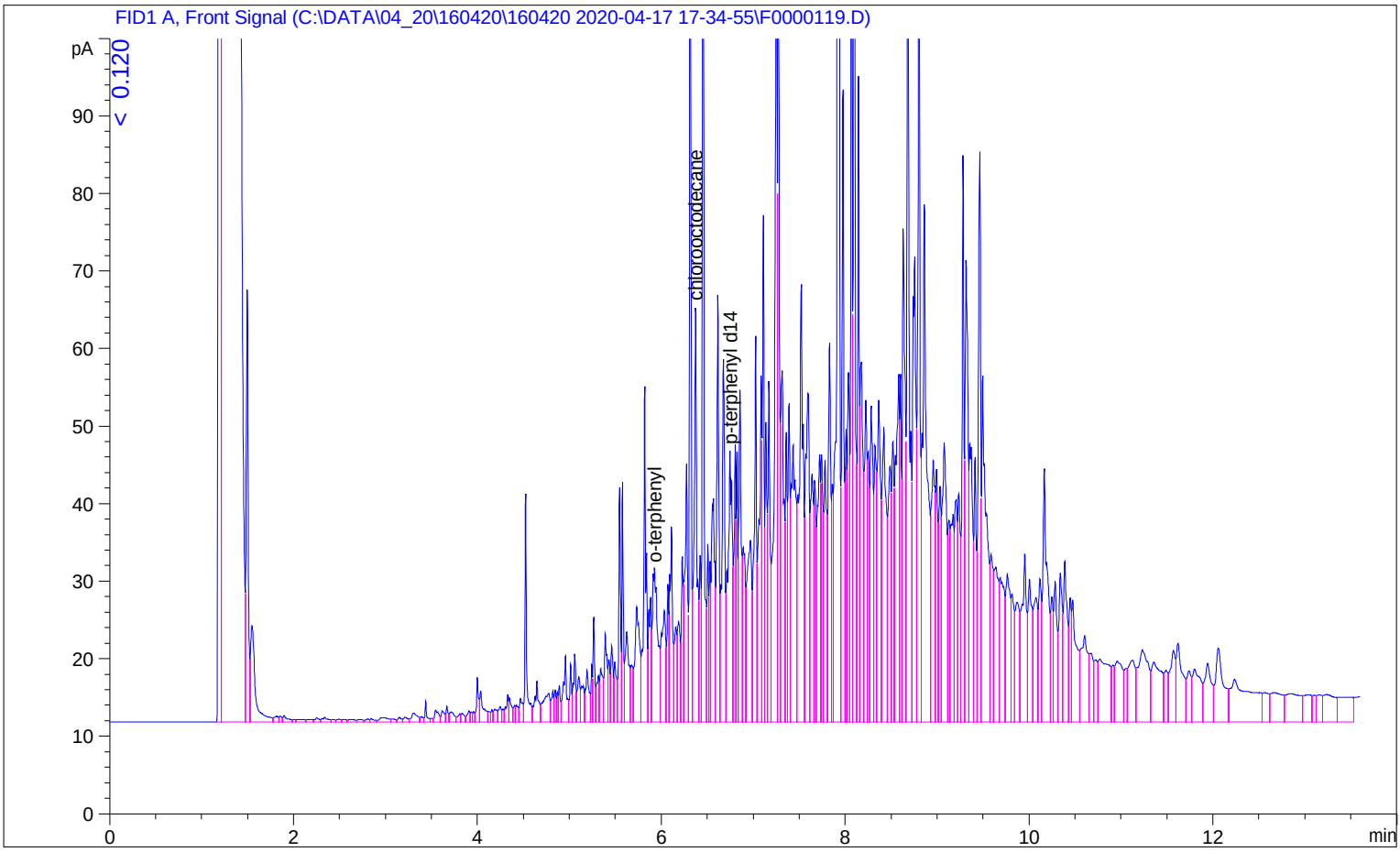
Name	Total Area [pA*s]	Amount [mg/L]
TRH C10-C14	37.87646	10.6249
NEPM >C10-C16	51.79475	14.5292
TRH C15-C28	237.44213	63.1439
NEPM >C16-C34	441.46283	117.4000
TRH C29-C36	373.12893	98.3739
NEPM >C34-C40	845.82122	222.9974
o-terphenyl	39.00630	9.9602
chlorooctodecan	3.59840	1.1031
p-terphenyl	16.53602	1.9743

Totals : 540.1068

*** End of Report ***

Data File C:\DATA\04_20\160420\160420 2020-04-17 17-34-55\F0000119.D
Sample Name: s240645-59 rr

```
======================================================================
Acq. Operator   : SYSTEM                        Seq. Line : 119
Sample Operator : SYSTEM
Acq. Instrument : GC6                            Location :   44  (F)
Injection Date  : 20-Apr-20 8:11:29 AM                Inj :   1
                                                Inj Volume : 1 µl
Acq. Method     : C:\DATA\04_20\160420\160420 2020-04-17 17-34-55\NEPM JF.M
Last changed    : 20-Mar-20 10:48:26 AM by SYSTEM
Analysis Method : C:\00 METHODS\2020\04_20\160420-F-PROCESSING-.M
Last changed    : 20-Apr-20 10:03:44 AM by SYSTEM
                  (modified after loading) (Current integration events modified)
Method Info     : FAST TPH WITH 15M HP5 COLUMNS
```

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======================================================================
                    External Standard Report
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Sorted By             :      Signal
Calib. Data Modified  :      17-Apr-20 11:30:06 AM
Multiplier            :      1.0000
Dilution              :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, Front Signal
```

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [mg/L]	Grp	Name
5.926	VV I	79.76112	3.64210e-1	29.04977		o-terphenyl
6.374	VV	116.85775	4.32944e-1	50.59286		chlorooctodecane

Data File C:\DATA\04_20\160420\160420 2020-04-17 17-34-55\F0000119.D
Sample Name: s240645-59 rr

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [mg/L]	Grp	Name
6.748	VV	I 117.17522	1.61712e-1	18.94865		p-terphenyl d14

Totals : 98.59128

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Summed Peaks Report

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Signal 1: FID1 A, Front Signal

Signal 1: FID1 A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [mg/L]
TRH C10-C14	2.505	4.360	103.64722	41.6029
NEPM >C10-C16	2.950	4.980	230.93282	92.6939
TRH C15-C28	4.361	7.951	4363.82037	1.645e3
NEPM >C16-C34	4.981	9.020	7043.70918	2.655e3
TRH C29-C36	7.951	9.330	3458.19067	1.293e3
NEPM >C34-C40	9.021	10.050	1576.14574	589.4344

Totals : 6317.1229

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Final Summed Peaks Report

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Signal 1: FID1 A, Front Signal

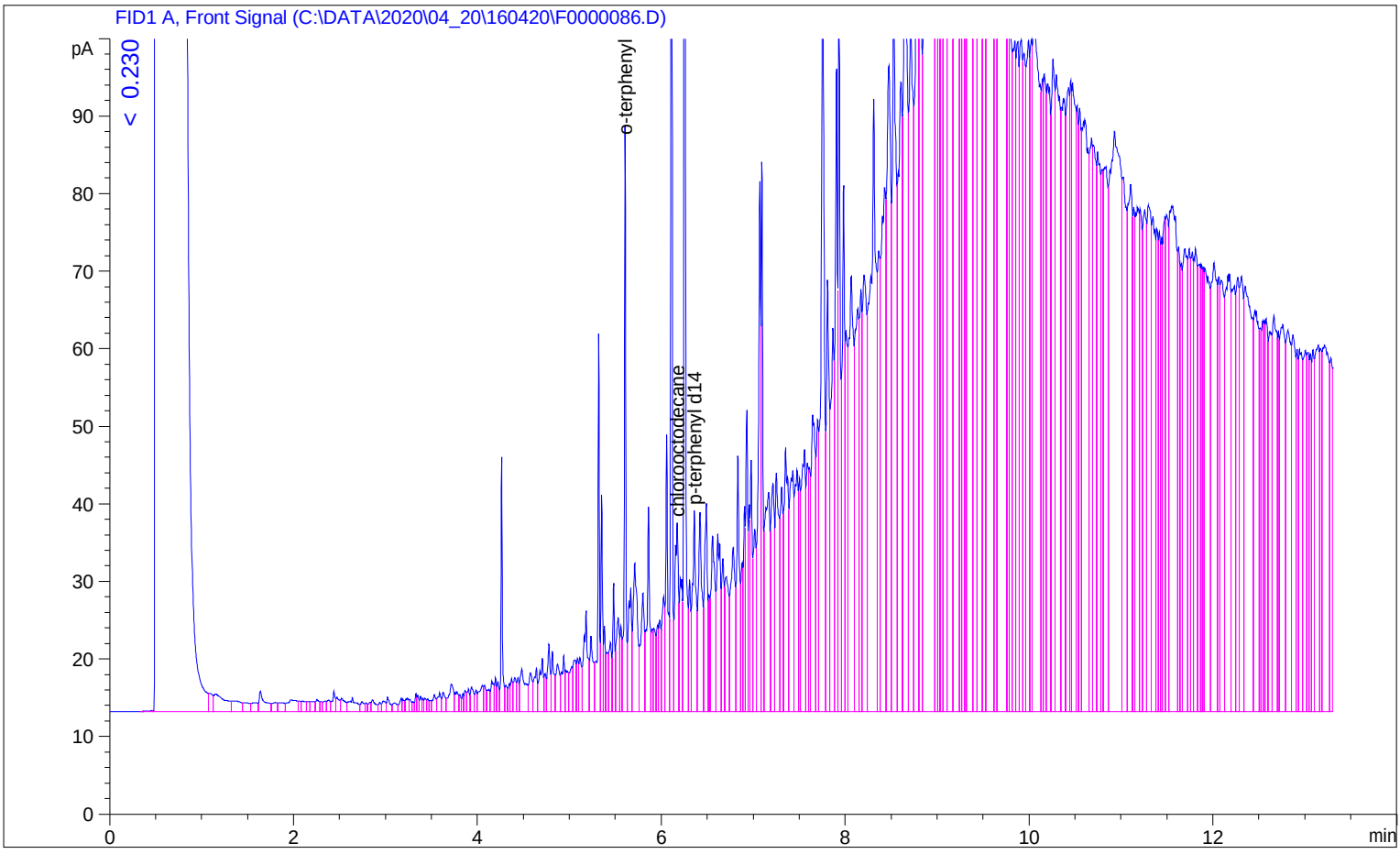
Name	Total Area [pA*s]	Amount [mg/L]
TRH C10-C14	103.64722	41.6029
NEPM >C10-C16	230.93282	92.6939
TRH C15-C28	4363.82037	1.645e3
NEPM >C16-C34	7043.70918	2.655e3
TRH C29-C36	3458.19067	1.293e3
NEPM >C34-C40	1576.14574	589.4344
o-terphenyl	79.76112	29.0498
chlorooctodecan	116.85775	50.5929
p-terphenyl d14	117.17522	18.9486

Totals : 6415.7142

*** End of Report ***

Data File C:\DATA\2020\04_20\160420\F0000086.D
Sample Name: s240645-60 rr

```
==========================================================================
Acq. Operator   :                                  Seq. Line :  86
Acq. Instrument : GC#4                              Location : Vial 11
Injection Date  : 17/04/2020 10:57:17 PM                 Inj :   1
                                                  Inj Volume : 1 µl
Acq. Method     : C:\CHEM32\1\METHODS\NEPM JF.M
Last changed    : 16/01/2020 11:55:46 AM
Analysis Method : C:\METHODS\2020\04_20\160420-F-PROCESSING-.M
Last changed    : 20/04/2020 7:34:18 AM
                  (modified after loading)
Method Info     : FAST TPH WITH 15M HP5 COLUMNS
```




```
==========================================================================
                    External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      17/04/2020 9:34:22 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, Front Signal

RetTime  Type     Area     Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                 [mg/L]
-------|------|----------|----------|----------|--|------------------
  5.606 VV    I   90.40099 1.30831e-1   11.82724    o-terphenyl
  6.174 VV        63.64913 1.53589e-1    9.77583    chlorooctodecane
  6.359 VV    I   72.26676 5.34858e-2    3.86524    p-terphenyl d14
```

Data File C:\DATA\2020\04_20\160420\F0000086.D
Sample Name: s240645-60 rr

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [mg/L]	Grp	Name
Totals :				25.46831		

Summed Peaks Report

Signal 1: FID1 A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [mg/L]
TRH C10-C14	2.040	4.105	200.98054	28.4373
NEPM >C10-C16	2.551	4.770	334.42574	47.3189
TRH C15-C28	4.106	7.840	3807.66119	516.5664
NEPM >C16-C34	4.771	8.951	7637.69093	1.036e3
TRH C29-C36	7.841	9.310	6792.90830	910.6097
NEPM >C34-C40	8.952	10.360	8363.10427	1.121e3
Totals :				3660.1989

Final Summed Peaks Report

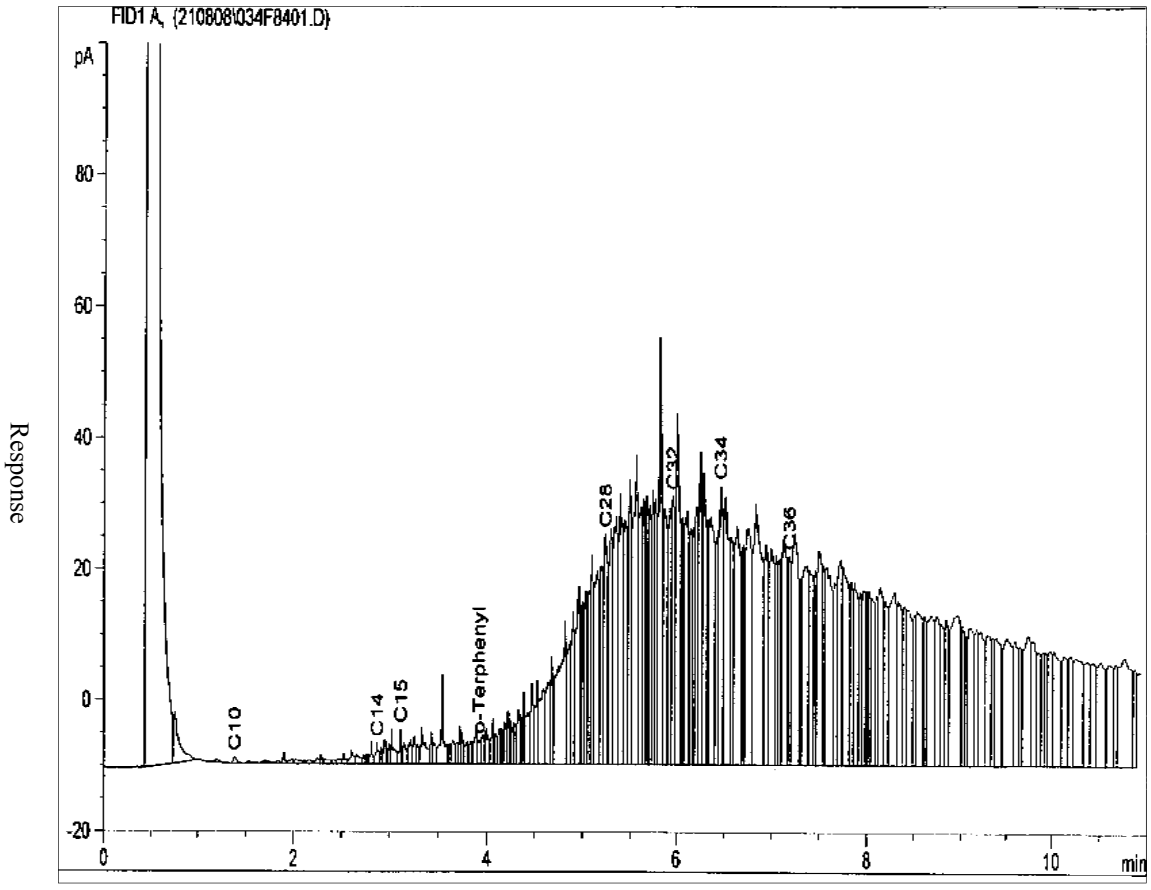
Signal 1: FID1 A, Front Signal

Name	Total Area [pA*s]	Amount [mg/L]
TRH C10-C14	200.98054	28.4373
NEPM >C10-C16	334.42574	47.3189
TRH C15-C28	3807.66119	516.5664
NEPM >C16-C34	7637.69093	1.036e3
TRH C29-C36	6792.90830	910.6097
NEPM >C34-C40	8363.10427	1.121e3
o-terphenyl	90.40099	11.8272
chlorooctodecan	63.64913	9.7758
p-terphenyl d14	72.26676	3.8652
Totals :	3685.6672	

*** End of Report ***

HYDROCARBON REFERENCE LIBRARY

ASPHALT (no coal tar)



Response

Retention Time (minutes)

The Envirolab reference chromatogram library was compiled using compounds found in petroleum products, standards, natural products and readily available commercial products.

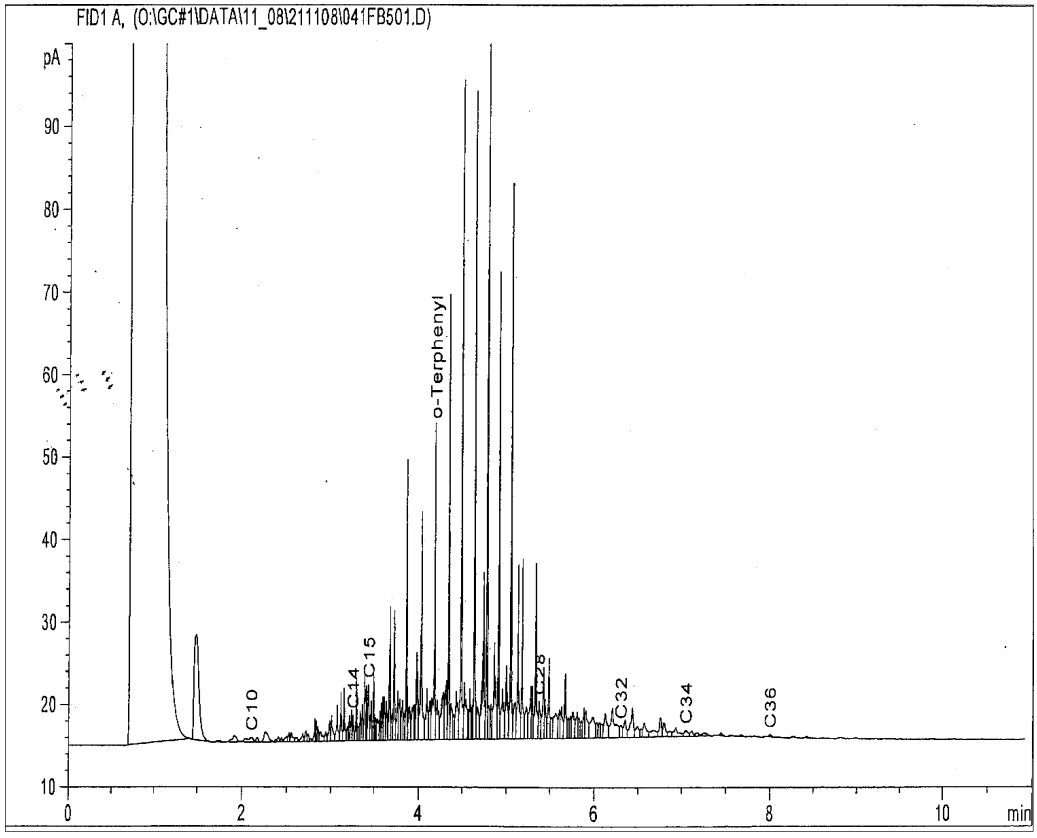
The components with the lowest boiling points tend to volatilize more rapidly than the components with higher boiling points. On the reference chromatograms, the components that have the shortest retention times (left side of the GC trace) are the most volatile and will tend to decrease in peak intensity preferentially as more volatilization takes place.

These reference chromatograms can be used as a guide for comparison with unknown samples to help identify the contaminants.

The o-Terphenyl peak is the TPH surrogate used in our extraction.

HYDROCARBON REFERENCE LIBRARY

COAL



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The o-Terphenyl peak is the TPH surrogate used in our extraction.

Appendix C

Quality Control and Quality Assurance
Chain of Custody Sheets (Field and Despatch)
Sample Receipt

Data Quality Assessment Report
Report on Supplementary Investigation
Proposed School
Lot 100, DP1261496 Maitland Street, Muswellbrook NSW

1. Data Quality Objectives

1.1 Data Quality Objectives (DQOs)

The Supplementary DSI has been devised broadly in accordance with the seven-step data quality objective (DQO) process, which is provided in Appendix B, Schedule B2 of NEPC (2013). The DQO process is outlined as follows:

Step 1 - State the Problem

The proposed development involves the demolition of existing structures and construction of a new school facility. Previous investigations have identified potential sources of soil contamination associated with the site's history. The 'problem' to be addressed is that the extent and nature of potential contamination on site is not fully understood. The objective of the supplementary investigation is therefore to assess the nature and extent of contamination at the site and make recommendations for remediation (where required) to render the site suitable for the proposed redevelopment works. Where required, options for the management or disposal of excess soils from site redevelopment will also be provided.

DP's project team included a Principal / Project Manager, field engineers and excavation subcontractor. The decision maker was the DP Principal / Project Manager.

Step 2 - Identify the Decision

Based on the site history, it is considered that the contaminants of concern are various organic and inorganic compounds impacting on soil (refer to the CSM in Section 6). As such, the analysis will focus on those contaminants relevant to the identified media.

The analytical data for soil will be compared to relevant SAC including HIL, HSL, EIL and ESL for an educational facility as per Tables 1A and 1B in Schedule B1, NEPC (2013).

The suitability of the site for the proposed development will be based on a comparison of the analytical results for all contaminants of concern to the adopted SAC. If necessary, results will also be compared to the 95% UCL of the mean concentrations (relevant to soil contamination under certain circumstances).

The following specific decisions will be made, as appropriate:

- What is the conceptual site model (ie sources, receptors, migration pathways, exposure)?
- Do the existing fill materials and/or natural soils pose a potential risk to identified receptors?
- Does the existing groundwater beneath the site pose a potential risk to identified receptors?
- Does the existing soil gas/soil vapour beneath the site pose a potential risk (toxic, explosion or asphyxiation) to identified receptors?
- Is the data sufficient to make a decision regarding the abovementioned risks, the compatibility of the site for the proposed development or are additional investigations required?
- Are there any off-site migration issues that need to be considered?
- What are the waste management requirements for excess soils associated with the development?
- Is the data sufficient to enable the preparation of a Remediation Action Plan (RAP) and/or Environmental Management Plan (EMP) should the data suggest these are required?

Step 3 - Identify the Inputs to the Decision

Inputs into the decisions are as follows:

- Collection and review of site history information including information regarding previous and current activities undertaken on the site and the surrounding areas;
- Review of previous investigations undertaken;
- Regional geology, topography, ASS risk mapping and hydrogeology;
- Soil samples will be collected at targeted locations and analysed for the relevant contaminants of concern;
- Screening for potential volatile organic compounds (ie soil vapour) will be conducted using a PID;
- The lithology of the site as described in the test pit logs and sample descriptions;
- If site conditions suggest additional contaminants of concern, eg if the condition of subsurface material encountered whilst drilling encounter particular odours, further analysis may be undertaken;
- Field and laboratory QA/QC data to assess the suitability of the environmental data for the assessment;
- All analysis undertaken at a NATA accredited laboratory; and
- The results will be compared with the SAC discussed below.

Step 4 - Define the Boundary of the Assessment

The study boundary is as shown on Drawing 1, Appendix D.

Step 5 - Develop a Decision Rule

The information obtained during the assessment will be used to characterise the site in terms of contamination issues and risk to human health and/or the environment. The decision rules used in characterising the site will be as follows:

- Laboratory test results for fill/soil will be assessed individually or statistically, if considered appropriate, to determine the 95% UCL of the mean concentration for each analyte or analyte group (of like materials);
- Laboratory test results for targeted locations (and identified 'hot spots') will be assessed individually;
- The adopted SAC will be from NSW EPA endorsed guidelines;
- Where such criteria are not available, other recognised national or international standards will be used;
- The contaminant concentrations in fill / soil should meet the following criteria, or further investigation or remedial action is required if:
    - The concentration of the contaminant is more than 2.5 times the SAC. Any location more than 2.5 times the adopted site criteria is classified as a 'hotspot', requiring further assessment / management; and
    - The calculated 95% UCL for a relevant area and discrete impacted fill/soil stratum (excluding any 'hotspot' concentrations) exceeds the adopted SAC;
    - The standard deviation of the results is greater than 50% of the SAC;
- Further investigation, remediation and/or management will be recommended if the site is found to be contaminated or containing contamination 'hot spots'.

Step 6 - Specify Acceptable Limits on Decision Errors

Considering the future site use / development, decision errors for the respective contaminants of concern for fill / soil are:

1. Deciding that the sites fill / soil exceeds the SAC when they truly do not; and
2. Deciding that the sites fill / soils are within the SAC when they are truly not.

Decision errors for the proposed assessment will be minimised and measured by the following:

- Compare new data with available previous investigations to determine the possible range of the parameters of interest;
- The sampling regime will target key strata identified to account for site variability;
- Sample collection and handling techniques will be with reference to DPs Field Procedures Manual;
- Samples will be prepared and analysed by a NATA accredited laboratory with the acceptance limits for laboratory QA/QC parameters based on the laboratory reported acceptance limits and those stated in NEPC (2013);
- The analyte selection is based on the available site history, past site activities, site features and the findings of the previous investigations. The potential for contaminants other than those proposed to be analysed is currently considered to be low;
- The SAC will be adopted from established and EPA endorsed guidelines where available. The SAC have risk probabilities already incorporated;
- Only NATA accredited laboratories using NATA endorsed methods will be used to perform laboratory analysis. Where NATA endorsed methods are not used, the reasons will be stated. The effect of using non-NATA methods (if relevant) on the decision making process will be explained.

Step 7 - Optimise the Design for Obtaining Data

Sampling design and procedures that will be implemented to optimise data collection for achieving the DQOs included the following as stated in the Auditor approved SAQP (DP 2020):

- Only NATA accredited laboratories using NATA endorsed methods are used to perform laboratory analysis whenever possible;
- Targeted soil sampling (within access constraints) will generally be used to provide supplementary information at the site;
- To optimise the selection of soil samples for chemical analysis, samples collected will be screened using a calibrated PID allowing for site assessment and sample selection. In addition, additional soil samples will be collected but kept ‘on hold’ pending details of initial analysis and will be analysed if further delineation is required; and

Adequately experienced environmental scientists / engineers were chosen to conduct field work and sample analysis interpretation.

2. Data Quality Indicators

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

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

The DQIs were assessed as outlined in the following table.

Table C1: Data Quality Indicators

DQO	Frequency	Data Acceptance Criteria
Completeness		
Field documentation correct	All samples	All samples
Soil bore logs complete and correct	All samples	All samples
Suitably qualified and experience sampler	All samples	All samples
Appropriate lab methods and limits of reporting (LORs)	All samples	All samples
Chain of custodies (COCs) completed appropriately	All samples	All samples
Sample holding times complied with	All samples	All samples
Proposed/critical locations sampled	-	Proposed/critical locations sampled
Comparability		
Consistent standard operating procedures for collection of each sample. Samples should be collected, preserved and handled in a consistent manner	All samples	All samples
Experienced sampler	All samples	All samples
Consistent analytical methods, laboratories and units	All samples	All samples
Representativeness		
Sampling appropriate for media and analytes (appropriate collection, handling and storage)	All samples	All Samples
Samples homogenous	All samples	All Samples
Samples extracted and analysed within recommended holding times	All samples	-

Table C1: Data Quality Indicators (cont)

DQO	Frequency	Data Acceptance Criteria
Precision		
Blind duplicates (intra-laboratory duplicates)	1 per 20 samples	30% RPD, then review RPDs >30% would be reviewed in relation to heterogeneity of sample and LOR
Laboratory duplicates	1 per 20 samples	<20% RPD Result > 20 × LOR <50% RPD Result 10-20 × LOR No Limit when RPD Result <10 × LOR
Accuracy		
Surrogate spikes	All organic samples	50-150%
Matrix spikes	1 per 20 samples	70-130% (inorganics) 60-140% (organics)
Laboratory control samples	1 per 20 samples	70-130% (inorganics) 60-140% (organics)
Method blanks	1 per 20 samples	<LOR

3. Field Quality Assurance and Quality Control

3.1 Overview

The field QC procedures for sampling as prescribed in the DP *Field Procedures Manual* were followed at all times during the investigation.

3.2 Sampling Team and Weather Conditions

Field sampling was undertaken by DP Environmental Engineers; Paulo Sebastian and Josh Kramer. Site works were undertaken on 7 April 2020. All members of the sampling team were instructed by the Project Manager regarding the sampling methods to be adopted. The same approach to the sampling was applied by each team member, minimising the potential for field sampling related variations in test outcomes.

Climatic or weather conditions are not considered to have impeded or significantly impacted the investigation.

3.3 Sample Collection

Soil samples were collected from the test pit. Further details of the sampling methodology are presented in Report Section 7. The QA/QC samples collected during the course of soil sampling comprised the following:

- Seven intra-laboratory replicates (10% of soil samples analysed), achieving the target of 10%; and
- Four inter-laboratory replicates (5% of soil samples analysed), achieving the target of 5%;

3.4 Logs

Logs for each soil sampling location were recorded in the field. The individual samples were recorded on the field logs along with the sample identity, depth, replicate sample locations, and observations. Logs are presented in Appendix A.

3.5 Decontamination Procedure

Where stainless steel sampling equipment was required the re-used sampling equipment was decontaminated between each use. Decontamination for (soil) sampling was undertaken for the re-used equipment (eg stainless steel trowel) prior to sample collection.

The decontamination procedure involved a three stage wash. The equipment was first rinsed with tap water (and a brush where required) to remove sediment followed by a 3% Decon 90 solution.

3.6 Chain of Custody

Chain of custody information was recorded on the Chain-of-Custody (COC) sheets which accompanied samples to the analytical laboratory. Signed copies of COCs are presented in Appendix C, following the laboratory certificates of analysis.

The COC documented*, inter alia*, the analytical laboratory, dispatch courier, DP dispatcher, date, time, sample identifications, sample type and date and analysis to be performed on each sample.

3.7 Field Replicates

Replicate samples were collected in the field as a measure of accuracy, precision and repeatability of the results.

Field replicate samples for soil were collected from the same location and an identical depth to the primary sample. Equal portions of the subject material were placed into the primary and replicate sampling jars and sealed. The sample was not homogenised so as to minimise the possible loss of volatiles. Replicate samples were labelled with a DP identification number, recorded on DP's field logs, so as to conceal their relationship to their primary sample from the analytical laboratory.

A measure of the consistency of results is derived by the calculation of relative percentage differences (RPDs) for replicate samples. A RPD of +/- 30% is generally considered acceptable for inorganic analytes by the industry, although in general a wider RPD range (50%) may be acceptable for organic analytes. RPDs above the generally acceptable limits (if applicable) are shown in **bold** on the relevant tables below.

3.7.1 Intra-Laboratory Analysis

Intra-laboratory replicates were analysed as an internal check of the reproducibility within the primary laboratory Envirolab Services Pty and as a measure of consistency of sampling techniques. The comparative results of analysis between original and intra-laboratory replicate samples are summarised in Table C2.

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

Table C2: Results of Quality Control Analysis – Building Surface Samples

			Metals	OCP																OPP	Complete OCP suite										Complete OPP suite			
			Lead	DDT+DDE+DDD	DDD	DDE	DDT	Aldrin & Dieldrin	Total Chlordane	alpha-chlordane	gamma-Chlordane	Total Endosulfan	Endosulfan I	Endosulfan II	Endosulfan Sulphate	Endrin	Heptachlor	Hexachlorobenzene	Methoxychlor	Chlorpyriphos	alpha-BHC	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	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
D4/JRK	0 - 0.05 m	07/04/2020	61	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B1-2	0 - 0.05 m	07/04/2020	57	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Difference			4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RPD			7%	0%	0%	0%	0%	**67%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
T3/JRK	0 - 0.05 m	07/04/2020	72	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	NT	NT	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NT	<0.05	<0.05	<0.05	NT	NT
B1-2	0 - 0.05 m	07/04/2020	57	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Difference			15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RPD			23%	0%	0%	0%	0%	N/A	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	N/A	0%	0%	0%	N/A	N/A
D1/JRK	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B4-1	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RPD			N/A	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
D2/JRK	0 - 0.05 m	07/04/2020	63	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B5-1	0 - 0.05 m	07/04/2020	53	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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			10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RPD			17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
D3/JRK	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
B7-4	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RPD			N/A	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
T2/JRK	0 - 0.05 m	07/04/2020	NT	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	NT	NT	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NT	<0.05	<0.05	<0.05	NT	NT
B7-4	0 - 0.05 m	07/04/2020	NT	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RPD			N/A	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	N/A	0%	0%	0%	N/A	N/A

Table C3: Results of Quality Control Analysis – Test Pits

			TRH						PAH				Phenol	Complete PAH suite												TRH				
			TRH C6 - C10	TRH >C10-C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Naphthalene [b]	Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ	Total PAHs	Phenol	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(g,h,i)perylene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	TRH C6 - C9	TRH C10 - C14	TRH C15 - C28	TRH C29 - C36	C10-C36 recoverable hydrocarbons
Sample ID	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
D1/JPS	-	07/04/2020	<25	<50	<25	NT	<100	<100	<0.1	<0.05	<0.5	<0.05	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50
401/0.15	0.15 m	07/04/2020	<25	150	<25	NT	620	720	<0.1	0.2	<0.5	1.7	<5	<0.1	<0.1	<0.1	<0.1	0.3	0.1	<0.1	0.2	<0.1	0.2	<0.1	0.2	<25	160	290	630	1080
Difference			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RPD			0%	N/A	0%	N/A	N/A	N/A	0%	N/A	0%	N/A	0%	0%	0%	0%	0%	N/A	0%	0%	N/A	0%	N/A	0%	N/A	0%	N/A	N/A	N/A	N/A
D3/JPS	-	07/04/2020	<25	<50	<25	NT	<100	<100	<0.1	<0.05	<0.5	<0.05	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50
406/0.35	0.35 m	07/04/2020	<25	<50	<25	NT	<100	<100	<0.1	<0.05	<0.5	<0.05	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50
Difference			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RPD			0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
T1/JPS	-	07/04/2020	<25	<50	<25	NT	<100	<100	<0.1	<0.05	<0.5	<0.05	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50
406/0.35	0.35 m	07/04/2020	<25	<50	<25	NT	<100	<100	<0.1	<0.05	<0.5	<0.05	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50
Difference			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RPD			0%	0%	0%	N/A	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Table C4: Results of Quality Control Analysis – Stockpile Samples

			Metals									TRH						BTEX				PAH				Phenol
			Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	Manganese	TRH C6 - C10	TRH >C10-C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene [b]	Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ	Total PAHs	Phenol
Sample ID	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
D7/JPS	-	07/04/2020	11	<0.4	11	52	8	<0.1	15	210	220	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.2	<0.5	0.79	<5
303/2	NA	07/04/2020	6	<0.4	6	23	4	<0.1	7	120	110	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.05	<0.5	0.05	<5
Difference			5	N/A	5	29	4	N/A	8	90	110	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.15	N/A	0.74	N/A
RPD			**59%**	0%	**59%**	**77%**	**67%**	N/A	**73%**	**55%**	**67%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**120%**	0%	**176%**	0%
T2/JPS	-	07/04/2020	22	<1	13	50	11	<0.1	14	246	245	<10	<50	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
303/2	NA	07/04/2020	6	<0.4	6	23	4	<0.1	7	120	110	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.05	<0.5	0.05	<5
Difference			5	N/A	5	29	4	N/A	8	90	110	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.74	N/A
RPD			**114%**	0%	**74%**	**74%**	**93%**	0%	**67%**	**69%**	**76%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Table C4: Results of Quality Control Analysis – Stockpile Samples (Continued)

			OCP																OPP	PCB								
Sample ID	Depth	Sample Date	DDT+DDE+DD [c]	DDD	DDE	DDT	Aldrin & Dieldrin	Total Chlordane	alpha-chlordane	gamma-Chlordane	Total Endosulfan	Endosulfan I	Endosulfan II	Endosulfan Sulphate	Endrin	Heptachlor	Hexachlorobenzene	Methoxychlor	Chlorpyriphos	Arochlor 1016	Total PCB	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arocior 1260
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
D7/JPS	0 m	07/04/2020	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
303/2	0 m	07/04/2020	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
RPD			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
T2/JPS	0 m	07/04/2020	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
303/2	0 m	07/04/2020	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	NT	NT	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	NT	<0.1	NT	NT	NT	NT	NT	NT
Difference			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
RPD			0%	0%	0%	0%	0%	0%	N/A	N/A	0%	0%	0%	0%	0%	0%	0%	0%	0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table C4: Results of Quality Control Analysis – Stockpile Samples (Continued)

			Additional metals			Complete PAH suite												TRH					Complete OCP suite										Complete OPP suite			
Sample ID	Depth	Sample Date	Aluminium	Iron	Selenium (Total)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(g,h,i)perylene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	TRH C6 - C9	TRH C10 - C14	TRH C15 - C28	TRH C29 - C36	C10-C36 recoverable hydrocarbons	alpha-BHC	beta-BHC	Bromophos-ethyl	Chlorpyriphos-methyl	delta-BHC	Diazinon	Dimethoate	Endrin Aldehyde	Lindane	Heptachlor Epoxide	Azinphos methyl (Guthion)	Ethion	Fenitrothion	Ronnel (fenchlorphos)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
D7/JPS	0 m	07/04/2020	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
303/2	0 m	07/04/2020	7000	20000	<2	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.1	<25	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Difference			3300	8000	<2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
RPD			3700	12000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
T2/JPS	0 m	07/04/2020	**72%**	**86%**	0%	0%	0%	0%	0%	N/A	0%	0%	0%	0%	0%	0%	N/A	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
303/2	0 m	07/04/2020	6370	20100	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NT	<0.05	<0.05	<0.05	NT	NT
Difference			3300	8000	<2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
RPD			**63%**	**86%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	N/A	0%	0%	0%	N/A	N/A

Notes to Tables C2, C3 and C4:

NA - Not Applicable

NT - Not Tested

Sample D4/JRK is replicate sample of B1-2

Sample T3/JRK is triplicate sample of D4/JRK and B1-2

Sample D1/JRK is replicate sample of B4-1

Sample D2/JRK is replicate sample of B5-1

Sample D3/JRK is replicate sample of B7-4

Sample T2/JRK is triplicate sample of D3/JRK and B7-4

Sample D1/JPS is replicate sample of 406/0.35

Sample D3/JPS is replicate sample of 401/0.15

Sample T1/JPS is triplicate sample of D3/JPS and 401/0.15

Sample D7/JPS is replicate sample of 303/2

Sample T2/JPS is triplicate sample of D7/JPS and 303/2

The calculated RPD values were generally within the acceptable range with the exception of those in bold. However, this is not considered to be significant because:

- The typically low actual differences in the concentrations of the replicate pairs where some RPD exceedances occurred. High RPD values reflect the small differences between two small numbers;
- The number of replicate pairs being collected from fill soils which by its nature is heterogeneous;
- Soil replicates, rather than homogenised soil duplicates, were used to minimise the risk of possible volatile loss, hence greater variability can be expected;
- Most of the recorded concentrations being relatively close to the LOR/PQL. High RPD values reflect the low concentrations;
- The majority of RPDs within a replicate pair being within the acceptable limits;
- All other QA/QC parameters met the DQIs.

Overall, the intra-laboratory replicate comparisons indicate that the sampling techniques were generally consistent and repeatable. An explanation will be required if this is not the case.

3.7.2 Inter-Laboratory Analysis

Inter-laboratory replicates were conducted as a check of the reproducibility of results between the primary laboratory Envirolab Services Pty and the secondary laboratory ALS Environmental and as a measure of consistency of sampling techniques.

The comparative results of analysis between original and inter-laboratory replicate samples are summarised in above Tables C2 to C4.

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

The calculated RPD values were generally within the acceptable range with the exception of those in bold. However, this is not considered to be significant because:

- The typically low actual differences in the concentrations of the replicate pairs where some RPD exceedances occurred. High RPD values reflect the small differences between two small numbers;
- The number of replicate pairs being collected from fill soils which by its nature is heterogeneous;
- Soil replicates, rather than homogenised soil duplicates, were used to minimise the risk of possible volatile loss, hence greater variability can be expected;
- Most of the recorded concentrations being relatively close to the LOR/PQL. High RPD values reflect the low concentrations;
- The majority of RPDs within a replicate pair being within the acceptable limits;
- All other QA/QC parameters met the DQIs.

The overall inter-laboratory replicate comparisons indicate that the sampling technique was generally consistent and repeatable and the two laboratory sampling handling and analytical methods are comparable.

3.8 Field Instrument Calibration

The photoionisation detector (PID) fitted with a 10.6 eV lamp was calibrated and serviced at Australian Scientific on 20 February 2020 and calibrated with isobutylene gas on the day prior to the soil sampling programme.

4. Laboratory Quality Assurance and Quality Control

4.1 Chain of Custody

Chain-of-custody procedures are discussed in Section 3.5.

4.2 Analytical Laboratories

Samples were submitted to the following laboratories for analysis:

- Primary Laboratory: Envirolab Services Pty Ltd (ELS);
- Secondary Laboratory: ALS Environmental.

The laboratories are both NATA accredited for the analysis undertaken.

4.3 Holding Times

A review of the laboratory certificates of analysis and chain-of-custody documentation indicated that holding times were met.

4.4 Analytical Methods

The laboratory analytical methods are provided on the laboratory certificates of analysis in Appendix B, along with the PQL/LOR.

4.5 Laboratory Replicate Results

Laboratory replicates are additional portions of a sample which are analysed in the same manner as the other samples. Laboratory replicate samples were generally analysed at a rate of 1 for every 10 samples in a batch. The average RPD for individual contaminants were generally within the laboratory acceptance limits.

4.6 Laboratory Blank (Reagent Blank) Results

The laboratory blank, sometimes referred to as the method blank or reagent blank is the sample prepared and analysed at the beginning of every analytical run, following calibration of the analytical apparatus. This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, it can be determined by processing solvents and reagents in the same manner as for samples. Laboratory blanks are generally analysed at a frequency of 1 in 20, with a minimum of one per batch.

All results should be less than the method PQL or LOR. The report results for the method blanks were generally within the acceptance criteria for both laboratories.

4.7 Matrix Spike

The matrix spike is a sample replicate prepared by adding a known amount of analyte prior to analysis, and then treated exactly the same as all other samples. The recovery result indicates the proportion of the known concentration of the analyte that is detected during analysis. The laboratory acceptance criteria for matrix spike recoveries for ELS is as follows.

Table C5 Laboratory Matrix Spike Acceptance Criteria

Laboratory	Analyte(s)	Accepted Recoveries
ELS	Inorganics / metals	70 – 130%
	organics	60 – 140%
	SVOC and speciated phenols	10 – 140%

The laboratory QC for matrix spikes were generally within the acceptance criteria for both laboratories.

4.8 Surrogate Spike

The surrogate spike sample is prepared by adding a known amount of surrogate, which behaves similarly to the analyte, prior to analysis of each sample. The recovery result indicates the proportion of the known concentration of the surrogate that is detected during analysis. The laboratory acceptance criteria for surrogate spike recoveries for ELS is as follows.

The laboratory QC for surrogate spikes were generally within the acceptance criteria for both laboratories.

4.9 Reference / Laboratory Control Sample (LCS)

This sample comprises spiking either a standard reference material or a control matrix (such as a blank of sand or water) with a known concentration of specific analytes. The LCS is then analysed and results compared against each other to determine how the laboratory has performed with regard to sample preparation and analytical procedure. LCSs are generally analysed at a frequency of 1 in 20, with a minimum of one analysed per batch.

The laboratory acceptance criteria for LCS recoveries for ELS is as follows.

Table C6 Laboratory LCS Acceptance Criteria

Laboratory	Analyte(s)	Accepted Recoveries
ELS	Inorganics / metals	70 – 130%
	organics	60 – 140%
	SVOC and speciated phenols	10 – 140%

The laboratory QC for LCSs were generally within the acceptance criteria for both laboratories.

4.10 Laboratory Comments

The laboratory QC for replicates, reagent blanks, matrix spikes, surrogate spikes, and LCS were generally within the acceptance standards. The results of the review of the laboratory QC by DP, including discussion of any non-conformities with the acceptance criteria, are presented in Table C7 below. In addition, some comments relevant to QA/QC were made in the laboratory certificates of analysis which are also summarised in Table C7.

Table C7: Laboratory QC Comments

Certificate of Analysis	Laboratory	Laboratory Comment	DP Comment
240645	ELS	The PQL has been raised for Selenium due to interferences from analytes (other than those being tested) in sample 240645-74.	OK
		Percent recovery is not possible to report due to the high concentration of the element/s in the sample/s. However, an acceptable recovery was obtained for the LCS.	OK
		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.	OK
		All samples analysed as received. However, samples 240645-21, 22, 29, 31, 36, 65, 66, 67, 68, 71, 73, 74 are below the minimum 500mL sample volume as per National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013.	The samples tested did not contain indicators of potential asbestos impacts (ie general absence of building materials). A slightly reduced volume of sample tested is therefore not considered to be significant nor impact on the results of testing.
		PAHs in Soil - The RPD for duplicate results is accepted due to the non homogenous nature of sample 240645-51.	OK
240645 - A	ELS	No comments	-
ES2012239	ALS	No comments	-

5. QA/QC Data Evaluation

An evaluation of field and laboratory QA/QC information against the stated DQOs has been undertaken. Overall, the SOPs were generally complied with in the field, and the laboratory quality control samples were generally within the laboratory acceptance criteria. The QC non-conformances, where they occurred, are not considered to have significantly impacted the quality of the results overall as they were generally minor in number compared to the overall QC data. On this basis, it is considered that an acceptable level of laboratory precision and consistency was achieved and that the laboratory data sets are reliable and useable for this assessment.

Douglas Partners Pty Ltd

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Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY FIELD SHEET

Project No: 91601.03	**Client Project Name:** Supplementary Investigation
Client: Pacific Coast Christian School Ltd	**Location:** Lot 52 Maitland St, Muswellbrook
Project Manager: CB	**DP Lab Received** By: JPS Date: 8/4/20

Do samples contain 'potential' HBM? Yes ☑ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)

Field									DP Lab	For Despatch to			Notes
Sample ID	Depth (m)	Duplicate Sample	Sample Type S-soil W water	Container Type G-glass P-plastic	ASS Samples	Sampling By	Sampling Date	Sampling Time	Storage Locn*	Envirolab 8/4/20	ALS 8/4/20		
301/1			S	G,P		JPS	7/8/20	8	Esky	✓			
301/2										✓			
301A/1													
301A/2										✓			
303/1		~~D1~~								✓			
303/2		D1/JPS/~~D2/JPS~~								✓	✓		
304/1										✓			
304/2													
306/1		~~E~~								✓			
306/2		~~E~~/JPS/~~E~~						5		✓			

*Default storage: glass containers in fridge, plastic containers shelved, ASS in freezer, water samples in fridge

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CHAIN OF CUSTODY FIELD SHEET

Project No: 91601.03	**Client Project Name:** Supplementary Investigation
Client: Pacific Coast Christian School Ltd	**Location:** Lot 62 Merilton St, Muswellbrook
Project Manager: CB	**DP Lab Received** By: JBS Date: 8/4/20

Do samples contain 'potential' HBM? Yes ☑ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)

Field									DP Lab	For Despatch to			Notes
Sample ID	Depth (m)	Duplicate Sample	Sample Type S-soil W water	Container Type G-glass P-plastic	ASS Samples	Sampling By	Sampling Date	Sampling Time	Storage Locn*	Envirolab 8/4/20	ALS 8/4/20		
101	0.05		S	G,P		JBS	7/4/20	8	Esky	✓			
	0.25-0.4			Bulk									
	0.15	D1/JBS		G,P						✓			
102	0.01												
	0.17									✓			
	0.14												
103	0.01												
	0.2												
	0.4									✓			
104	0.2												
105	0.2	D2/JBS											
	0.3			P									
	0.4-0.85			U50									
	1.5			P									
	2.5			P									
	2.8			P									
106A	0.25			G,P						✓			
	0.35			G,P				5		✓			

*Default storage: glass containers in fridge, plastic containers shelved, ASS in freezer, water samples in fridge

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CHAIN OF CUSTODY FIELD SHEET

Project No: 91601.03	**Client Project Name:** Supplementary Investigation
Client: Pacific Coast Christian School Ltd	**Location:** Lot 62 Maitland St, Muswellbrook
Project Manager: CB	**DP Lab Received** By: JPS Date: 8/4/20

Do samples contain 'potential' HBM? Yes ☐ No ☑ (If YES, then handle, transport and store in accordance with FPM HAZID)

Field									DP Lab	For Despatch to			Notes
Sample ID	Depth (m)	Duplicate Sample	Sample Type S-soil W water	Container Type G-glass P-plastic	ASS Samples	Sampling By	Sampling Date	Sampling Time	Storage Locn*	Envirolab 8/4/20	ALS 8/4/20		
106A	0.5		S	G,P		JPS	7/4/20	8	Esky	✓			
406	0.35	D3/JPS/T1/JPS								✓	✓		
407	~~40~~ 0.28									✓			
408	0.21			P									
409	0.08	D5/JPS/T3/JPS		G,P									
	0.2	D4/JPS											
410	0.2												
	0.3-0.75			U50									
	1.0			P									
	2.5			P									
411	0.01			G,P						✓			
	0.2												
412	0.01												
	0.15									✓			
413	0.08												
	0.15									✓			
~~6~~													
			↓	↓		↓	↓	5	↓				

*Default storage: glass containers in fridge, plastic containers shelved, ASS in freezer, water samples in fridge

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CHAIN OF CUSTODY FIELD SHEET

Project No: 91601.03	**Client Project Name:** Supplementary Investigation
Client: Pacific Coast Christian School Ltd	**Location:** Lot 62 Marilla St, Muswellbrook
Project Manager: CB	**DP Lab Received** By: JPS Date: 8/4/20

Do samples contain 'potential' HBM? Yes ☐ No ☑ (If YES, then handle, transport and store in accordance with FPM HAZID)

Field										DP Lab	For Despatch to			Notes
Sample ID	Depth (m)	Duplicate Sample	Sample Type S-soil W water	Container Type G-glass P-plastic	ASS Samples	Sampling By	Sampling Date	Sampling Time		Storage Locn*				
501	0.3-0.6		S	G, Bulk		JPS	7/4/20	8		Esky/Shelf				
	1-1.3			G, Bulk										
	2.0			P										
	2.5			P										
	2.9			P										
502	0.5-0.95			U50										
	0.5			P										
	1.0													
	2.0													
	2.5													
503	0.5-0.95			U50										
	0.5			P										
	1-1.45			U50										
	1.0			P										
	2.0													
	2.5								5					

*Default storage: glass containers in fridge, plastic containers shelved, ASS in freezer, water samples in fridge

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CHAIN OF CUSTODY FIELD SHEET

Project No: 91601.03	**Client Project Name:** Supplementary Investigation
Client: Pacific Coast Christian School Ltd	**Location:** Lot 62 Maitland St, Muswellbrook
Project Manager: CB	**DP Lab Received** By: JRK Date: 8/4/20

Do samples contain 'potential' HBM? Yes ☐ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)

Field									DP Lab	For Despatch to			Notes
Sample ID	Depth (m)	Duplicate Sample	Sample Type S-soil W water	Container Type G-glass P-plastic	ASS Samples	Sampling By	Sampling Date	Sampling Time	Storage Locn*	Enviro lab 8/4/20	ALS 8/4/20		
B1-1			S	G, P		JRK	7/4/20	8:30	Fridge	✓			
B1-2		D4/JRK T3/JRK	↓	↓		↓	↓	↓	↓	✓	✓		
B1-3										✓			
B1-4										✓			
B2-1										✓			
B2-2										✓			
B2-3										✓			
B2-4										✓			
B3-1										✓			
B3-2										✓			
B3-3										✓			
B3-4										✓			
B4-1		D1/JRK T1/JRK								✓			
B4-2										✓			
B4-3										✓			
B4-4										✓			
B5-1		D2/JRK						↓		✓			
B5-2			↓	↓		↓	↓	17:00	↓	✓			

*Default storage: glass containers in fridge, plastic containers shelved, ASS in freezer, water samples in fridge

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CHAIN OF CUSTODY FIELD SHEET

Project No: 91601.03	**Client Project Name:** Supplementary Investigation
Client: Pacific Coast Christian School Ltd	**Location:** Lot 62, Maitland St, Muswellbrook
Project Manager: CB	**DP Lab Received** By: JRK Date: 8/4/20

Do samples contain 'potential' HBM? Yes ☐ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)

Field									DP Lab	For Despatch to			Notes
Sample ID	Depth (m)	Duplicate Sample	Sample Type S-soil W water	Container Type G-glass P-plastic	ASS Samples	Sampling By	Sampling Date	Sampling Time	Storage Locn*	Envirolab 8/4/20	ALS 8/4/20		
B5-3			S	G, P		JRK	7/4/20	8:30	Fridge	✓			
B5-4			↓	↓				↓	↓	✓			
B6-1										✓			
B6-2										✓			
B6-3										✓			
B6-4										✓			
B7-1										✓			
B7-2										✓			
B7-3										✓			
B7-4		D3/JRK T2/JRK								✓	✓		
B8-1										✓			
B8-2										✓			
B8-3										✓			
B8-4										✓			
B9-1										✓			
B9-2										✓			
B9-3										✓			
B9-4			↓	↓				17:00	↓	✓			

*Default storage: glass containers in fridge, plastic containers shelved, ASS in freezer, water samples in fridge

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CHAIN OF CUSTODY FIELD SHEET

Project No: 91601.03	**Client Project Name:** Supplementary Investigation
Client: Pacific Coast Christian School Ltd	**Location:** Lot 62, Maitland St, Muswellbrook.
Project Manager: CB	**DP Lab Received** By: JRK Date: 8/4/20

Do samples contain 'potential' HBM? Yes ☐ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)

Field									DP Lab	For Despatch to			Notes
Sample ID	Depth (m)	Duplicate Sample	Sample Type S-soil W water	Container Type G-glass P-plastic	ASS Samples	Sampling By	Sampling Date	Sampling Time	Storage Locn*	Envirolab 8/4/20	ALS 8/4/20		
BH0-1			S	G,P		JRK	7/4/20	8:30	Fridge	✓			
BH0-2			↓	↓		↓	↓	↓	↓	✓			
BH0-3			↓	↓		↓	↓	↓	↓	✓			
BH0-4			↓	↓		↓	↓	↓	↓	✓			
F1/JRK			Fragment	P		↓	↓	↓	↓	✓			
F2/JRK			↓	↓		↓	↓	↓	↓	✓			
F3/JRK			↓	↓		↓	↓	↓	↓	✓			
F4/JRK			↓	↓		↓	↓	↓	↓	✓			
F5/JRK			↓	↓		↓	↓	↓	↓	✓			
F6/JRK			↓	↓		↓	↓	↓	↓	✓			
307/1			S	G,P		↓	↓	↓	↓	✓			
307/2			S	G,P		↓	↓	17:00	↓	✓			

*Default storage: glass containers in fridge, plastic containers shelved, ASS in freezer, water samples in fridge

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CHAIN OF CUSTODY DESPATCH SHEET (2)

Project No: 91601.03	**Suburb/Town:** Muswellbrook	**To:** Envirolab Services Pty Ltd	
DP Order No: 150083	**DP Contact Person:** Paulo Sebastian / Chris Bozinovski	12 Ashley Street, CHATSWOOD NSW 2067	
Prior Storage: Esky X Fridge ☐ Shelved ☐		**Ph:** (02) 9910 6200	**Attn:** Jacinta Hurst
Do samples contain 'potential' HBM? Yes ☐ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)			

	Sample				Analytes								Notes
	DP ID	Date Sampled	Type S-soil W-water	Lab ID	TRH, PAH, Phenol	TRH, BTEX, PAH, Phenols, OCP, OPP, PCB, Metals (12)	OCP, OPP	Lead	Asbestos in soil (500mL)	Asbestos I.D Material			
1	B1-1	7/4/20	S				✓	✓	✓				
2	B1-2	↓	↓				✓	✓	✓				
3	B1-3						✓	✓	✓				
4	B1-4						✓	✓	✓				
5	B2-1						✓	✓					
6	B2-2						✓	✓					
7	B2-3						✓	✓					
8	B2-4						✓	✓					
9	B3-1						✓						
10	B3-2	↓	↓				✓						
	PQL (S) mg/kg												
	PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐											

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 240645
Date Received: 9/4/20
Time Received: 1045
Received By: JD
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

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

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe, Al, Se, Sn, Sb, Mg, Co, B,

Total number of samples in container: 75

Date relinquished: 9/4/20

Results required by:
☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours X Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: JD

Date: 9/4/20

Lab Ref: 240645

Send results to:
Douglas Partners Pty Ltd

Email:
paulo.sebastian@douglaspartners.com.au
Josh.kramer@douglaspartners.com.au
chris.bozinovski@douglaspartners.com.au

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CHAIN OF CUSTODY DESPATCH SHEET (2)

Project No: 91601.03	**Suburb/Town:** Muswellbrook	**To:** Envirolab Services Pty Ltd	
DP Order No: 150083	**DP Contact Person:** Paulo Sebastian / Chris Bozinovski	12 Ashley Street, CHATSWOOD NSW 2067	
Prior Storage: Esky X Fridge ☐ Shelved ☐		**Ph:** (02) 9910 6200	**Attn:** Jacinta Hurst
Do samples contain 'potential' HBM? Yes ☑ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)			

	Sample				Analytes								Notes
	DP ID	Date Sampled	Type S-soil W-water	Lab ID	TRH, PAH, Phenol	TRH, BTEX, PAH, Phenols, OCP, OPP, PCB, Metals (12)	OCP, OPP	Lead	Asbestos in soil (500mL)	Asbestos I.D Material			
11	B3-3	7/4/20	S				✓						
12	B3-4						✓						
13	BH-1						✓						
14	BH-2						✓						
15	BH-3						✓						
16	BH-4						✓						
17	BS-1						✓	✓	✓				
18	BS-2						✓	✓	✓				
19	BS-3						✓	✓	✓				
20	BS-4	↓	↓				✓	✓	✓				
	PQL (S) mg/kg												
	PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐											

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

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe, Al, Se, Sn, Sb, Mg, Co, B,

Total number of samples in container: 75

Date relinquished: 8/4/20

Results required by:
☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours X Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature:

Date: 9/4/20

Lab Ref: 240645

Send results to:
Douglas Partners Pty Ltd

Email:
paulo.sebastian@douglaspartners.com.au
Josh.kramer@douglaspartners.com.au
chris.bozinovski@douglaspartners.com.au

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CHAIN OF CUSTODY DESPATCH SHEET (2)

Project No: 91601.03	**Suburb/Town:** Muswellbrook	**To:** Envirolab Services Pty Ltd 12 Ashley Street, CHATSWOOD NSW 2067
DP Order No: 150083	**DP Contact Person:** Paulo Sebastian / Chris Bozinovski	
Prior Storage: Esky X Fridge ☐ Shelved ☐		**Ph:** (02) 9910 6200 **Attn:** Jacinta Hurst
Do samples contain 'potential' HBM? Yes ☑ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)		

	Sample				Analytes								Notes
	DP ID	Date Sampled	Type S-soil W-water	Lab ID	TRH, PAH, Phenol	TRH, BTEX, PAH, Phenols, OCP, OPP, PCB, Metals (12)	OCP, OPP	Lead	Asbestos in soil (500mL)	Asbestos I.D Material			
21	B6-1	7/4/20	S				✓	✓	✓				
22	B6-2						✓	✓	✓				
23	B6-3						✓	✓	✓				
24	B6-4						✓	✓	✓				
25	B7-1						✓						
26	B7-2						✓						
27	B7-3						✓						
28	B7-4						✓						
29	B8-1						✓	✓	✓				
30	B8-2	↓	↓				✓	✓	✓				
	PQL (S) mg/kg												
	PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐											

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

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe, Al, Se, Sn, Sb, Mg, Co, B,

Total number of samples in container: 25

Date relinquished: 3/4/20

Results required by.....
☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours X Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: .....

Date: 9/4/20

Lab Ref: 240645

Send results to:
Douglas Partners Pty Ltd

Email:
paulo.sebastian@douglaspartners.com.au
Josh.kramer@douglaspartners.com.au
chris.bozinovski@douglaspartners.com.au

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CHAIN OF CUSTODY DESPATCH SHEET (2)

Project No: 91601.03	**Suburb/Town:** Muswellbrook	**To:** Envirolab Services Pty Ltd 12 Ashley Street, CHATSWOOD NSW 2067	
DP Order No: 150083	**DP Contact Person:** Paulo Sebastian / Chris Bozinovski		
Prior Storage: Esky X Fridge ☐ Shelved ☐		**Ph:** (02) 9910 6200	**Attn:** Jacinta Hurst
Do samples contain 'potential' HBM? Yes ☑ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)			

	Sample				Analytes								Notes
	DP ID	Date Sampled	Type S-soil W-water	Lab ID	TRH, PAH, Phenol	TRH, BTEX, PAH, Phenols, OCP, OPP, PCB, Metals (12)	OCP, OPP	Lead	Asbestos in soil (500mL)	Asbestos I.D Material			
31	B8-3	7/4/20	S				✓	✓	✓				
32	B8-4	↓	↓				✓	✓	✓				
33	B9-1						✓		✓				
34	B9-2						✓		✓				
35	B9-3						✓		✓				
36	B9-4						✓		✓				
37	B10-1						✓						
38	B10-2						✓						
39	B10-3						✓						
40	B10-4	↓	↓				✓						
	PQL (S) mg/kg												
	PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐											

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

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe, Al, Se, Sn, Sb, Mg, Co, B,

Total number of samples in container: 75

Date relinquished: 8/4/20

Results required by.....
☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours X Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: JOH

Date: 9/4/20

Lab Ref: 240645

Send results to:
Douglas Partners Pty Ltd
Email:
paulo.sebastian@douglaspartners.com.au
Josh.kramer@douglaspartners.com.au
chris.bozinovski@douglaspartners.com.au

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CHAIN OF CUSTODY DESPATCH SHEET (2)

Project No: 91601.03	**Suburb/Town:** Muswellbrook	**To:** Envirolab Services Pty Ltd 12 Ashley Street, CHATSWOOD NSW 2067	
DP Order No: 150083	**DP Contact Person:** Paulo Sebastian / Chris Bozinovski		
Prior Storage: Esky X Fridge ☐ Shelved ☐		**Ph:** (02) 9910 6200	**Attn:** Jacinta Hurst
Do samples contain 'potential' HBM? Yes ☑ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)			

	Sample				Analytes								Notes
	DP ID	Date Sampled	Type S-soil W-water	Lab ID	TRH, PAH, Phenol	TRH, BTEX, PAH, Phenols, OCP, OPP, PCB, Metals (12)	OCP, OPP	Lead	Asbestos in soil (500mL)	Asbestos I.D Material			
41	F1/JRK	7/4/20	S Fragment							✓			
42	F2/JRK									✓			
43	F3/JRK									✓			
44	F4/JRK									✓			
45	F5/JRK									✓			
46	F6/JRK		↓							✓			
47	D1/JRK		S				✓						
48	D2/JRK						✓	✓					
49	D3/JRK						✓						
50	D4/JRK	↓	↓				✓	✓					
	PQL (S) mg/kg												
	PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐											

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

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe, Al, Se, Sn, Sb, Mg, Co, B,

Total number of samples in container: 75

Date relinquished: 8/4/20

Results required by.....
☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours X Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: .....

Date: 9/4/20

Lab Ref: 240645

Send results to:
Douglas Partners Pty Ltd
Email:
paulo.sebastian@douglaspartners.com.au
Josh.kramer@douglaspartners.com.au
chris.bozinovski@douglaspartners.com.au

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CHAIN OF CUSTODY DESPATCH SHEET (2)

Project No: 91601.03	**Suburb/Town:** Muswellbrook	**To:** Envirolab Services Pty Ltd 12 Ashley Street, CHATSWOOD NSW 2067
DP Order No: 150083	**DP Contact Person:** Paulo Sebastian / Chris Bozinovski	
Prior Storage: Esky X . Fridge ☐ Shelved ☐		**Ph:** (02) 9910 6200 — **Attn:** Jacinta Hurst
Do samples contain 'potential' HBM? Yes ☑ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)		

	Sample				Analytes								Notes
	DP ID	Date Sampled	Type S-soil W-water	Lab ID	TRH, PAH, Phenol	TRH, BTEX, PAH, Phenols, OCP, OPP, PCB, Metals (12)	OCP, OPP	Lead	Asbestos in soil (500mL)	Asbestos I.D Material	Coal Tar I-D		
51	401/0.05	7/4/20	S		✓						✓		
52	401/0.15	↓	↓		✓								
53	402/0.4				✓								
54	404/0.2				✓								
55	406/0.35				✓								
56	106A/0.25				✓						✓		
57	106A/0.35				✓								
58	106A/0.5				✓								
59	407/0.28				✓						✓		
60	411/0.01	↓	↓		✓						✓		
	PQL (S) mg/kg												
	PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐											

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

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe, Al, Se, Sn, Sb, Mg, Co, B,

Total number of samples in container: 75

Date relinquished: 8/4/20

Results required by.....
☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours X Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: JAA

Date: 9/4/20

Lab Ref: 240645

Send results to:
Douglas Partners Pty Ltd

Email:
paulo.sebastian@douglaspartners.com.au
Josh.kramer@douglaspartners.com.au
chris.bozinovski@douglaspartners.com.au

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CHAIN OF CUSTODY DESPATCH SHEET (2)

Project No: 91601.03	**Suburb/Town:** Muswellbrook	**To:** Envirolab Services Pty Ltd	
DP Order No: 150083	**DP Contact Person:** Paulo Sebastian / Chris Bozinovski	12 Ashley Street, CHATSWOOD NSW 2067	
Prior Storage: Esky X Fridge ☐ Shelved ☐		**Ph:** (02) 9910 6200	**Attn:** Jacinta Hurst
Do samples contain 'potential' HBM? Yes ☑ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)			

	Sample				Analytes								Notes
	DP ID	Date Sampled	Type S-soil W-water	Lab ID	TRH, PAH, Phenol	TRH, BTEX, PAH, Phenols, OCP, OPP, PCB, Metals (12)	OCP, OPP	Lead	Asbestos in soil (500mL)	Asbestos I.D Material	Coal Tar I.D		
61	412/0.15	7/4/20	S		✓								
62	413/0.15	↓	↓		✓								
63	D1/JBS				✓								
64	D3/JBS				✓								
65	301/1					✓			✓				Combo 6 + additional
66	301/2					✓			✓				↓
67	301A/2					✓			✓				
68	303/1					✓			✓				
69	303/2					✓			✓				
70	304/1	↓	↓			✓			✓				
	PQL (S) mg/kg												
	PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐											

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

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe, Al, Se, Sn, Sb, Mg, Co, B,

Total number of samples in container: 75

Date relinquished: 8/4/20

Results required by:
☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours X Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: [signature]

Date: 9/4/20

Lab Ref: 240645

Send results to:
Douglas Partners Pty Ltd

Email:
paulo.sebastian@douglaspartners.com.au
Josh.kramer@douglaspartners.com.au
chris.bozinovski@douglaspartners.com.au

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET (2)

Project No: 91601.03	**Suburb/Town:** Muswellbrook	**To:** Envirolab Services Pty Ltd	
DP Order No: 150083	**DP Contact Person:** Paulo Sebastian / Chris Bozinovski	12 Ashley Street, CHATSWOOD NSW 2067	
Prior Storage: Esky X Fridge ☐ Shelved ☐		**Ph:** (02) 9910 6200	**Attn:** Jacinta Hurst
Do samples contain 'potential' HBM? Yes ☑ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)			

	Sample				Analytes								Notes
	DP ID	Date Sampled	Type S-soil W-water	Lab ID	TRH, PAH, Phenol	TRH, BTEX, PAH, Phenols, OCP, OPP, PCB, Metals (12)	OCP, OPP	Lead	Asbestos in soil (500mL)	Asbestos I.D Material			
71	306/1	7/4/20	S			✓			✓				Combo 6 + additional
72	306/2	↓	↓			✓			✓				↓
73	307/1					✓			✓				
74	307/2					✓			✓				
75	D7/JBS	↓	↓			✓							↓
PQL (S) mg/kg													
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐												

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

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe, Al, Se, Sn, Sb, Mg, Co, B,

Total number of samples in container: 75

Date relinquished: 8/4/20

Results required by:
☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours X Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: DFF

Date: 9/4/20

Lab Ref: E40645

Send results to:
Douglas Partners Pty Ltd

Email:
paulo.sebastian@douglaspartners.com.au
Josh.kramer@douglaspartners.com.au
chris.bozinovski@douglaspartners.com.au

Douglas Partners
Geotechnics / Environment / Groundwater

240645-A

CHAIN OF CUSTODY DESPATCH SHEET (2)

Project No: 91601.03	**Suburb/Town: Muswellbrook**	**To: Envirolab Services Pty Ltd** **12 Ashley Street, CHATSWOOD NSW 2067**	
DP Order No: 150118	**DP Contact Person:** Paulo Sebastian		
Prior Storage: Esky X Fridge ☐ Shelved ☐		**Ph: (02) 9910 6200**	**Attn: Jacinta Hurst**
Do samples contain 'potential' HBM? Yes ☐ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)			

Sample				Analytes								Notes
DP ID	Date Sampled	Type S-soil W-water	Lab ID	TCLP Lead	TCLP Benzo(a)pyrene	ASLP Benzo(a)pyrene						
B8-2	7/4/20	S	240645-30	X								
413/0.15	7/4/20	S	240645-62		X	X						
PQL (S) mg/kg												
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐											

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

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe, Al, Se, Sn, Sb, Mg, Co, B,

Total number of samples in container: ....At Envirolab.....

Date relinquished:.....8/4/20.....

Results required by.....

☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours X Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature:
.....

Date:
.....

Lab Ref:

Send results to:
Douglas Partners Pty Ltd
Email: paulo.sebastian@douglaspartners.com.au

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 Newcastle
Attention	Paulo Sebastian

Sample Login Details

Your reference	91601.03, Muswellbrook
Envirolab Reference	240645
Date Sample Received	09/04/2020
Date Instructions Received	09/04/2020
Date Results Expected to be Reported	20/04/2020

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	69 Soil, 6 Material
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	11.9
Cooling Method	Ice
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:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
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customerservice@envirolab.com.au
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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 NEPM - ASB-001	Asbestos ID - materials	Coal Tar
B1-1				✓	✓		✓		✓		
B1-2				✓	✓		✓		✓		
B1-3				✓	✓		✓		✓		
B1-4				✓	✓		✓		✓		
B2-1				✓	✓		✓				
B2-2				✓	✓		✓				
B2-3				✓	✓		✓				
B2-4				✓	✓		✓				
B3-1				✓	✓						
B3-2				✓	✓						
B3-3				✓	✓						
B3-4				✓	✓						
B4-1				✓	✓						
B4-2				✓	✓						
B4-3				✓	✓						
B4-4				✓	✓						
B5-1				✓	✓		✓		✓		
B5-2				✓	✓		✓		✓		
B5-3				✓	✓		✓		✓		
B5-4				✓	✓		✓		✓		
B6-1				✓	✓		✓		✓		
B6-2				✓	✓		✓		✓		
B6-3				✓	✓		✓		✓		
B6-4				✓	✓		✓		✓		
B7-1				✓	✓						
B7-2				✓	✓						
B7-3				✓	✓						
B7-4				✓	✓						
B8-1				✓	✓		✓		✓		
B8-2				✓	✓		✓		✓		
B8-3				✓	✓		✓		✓		
B8-4				✓	✓		✓		✓		

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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 NEPM - ASB-001	Asbestos ID - materials	Coal Tar
B9-1				✓	✓				✓		
B9-2				✓	✓				✓		
B9-3				✓	✓				✓		
B9-4				✓	✓				✓		
B10-1				✓	✓						
B10-2				✓	✓						
B10-3				✓	✓						
B10-4				✓	✓						
F1/JRK										✓	
F2/JRK										✓	
F3/JRK										✓	
F4/JRK										✓	
F5/JRK										✓	
F6/JRK										✓	
D1/JRK				✓	✓						
D2/JRK				✓	✓		✓				
D3/JRK				✓	✓						
D4/JRK				✓	✓		✓				
401/0.05	✓	✓	✓					✓			✓
401/0.15	✓	✓	✓					✓			
402/0.4	✓	✓	✓					✓			
404/0.2	✓	✓	✓					✓			
406/0.35	✓	✓	✓					✓			
106A/0.25	✓	✓	✓					✓			✓
106A/0.35	✓	✓	✓					✓			
106A/0.5	✓	✓	✓					✓			
407/0.28	✓	✓	✓					✓			✓
411/0.01	✓	✓	✓					✓			✓
412/0.15	✓	✓	✓					✓			
413/0.15	✓	✓	✓					✓			
D1/JPS	✓	✓	✓					✓			
D3/JPS	✓	✓	✓					✓			

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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 NEPM - ASB-001	Asbestos ID - materials	Coal Tar
301/1	✓	✓	✓	✓	✓	✓	✓	✓	✓		
301/2	✓	✓	✓	✓	✓	✓	✓	✓	✓		
301A/2	✓	✓	✓	✓	✓	✓	✓	✓	✓		
303/1	✓	✓	✓	✓	✓	✓	✓	✓	✓		
303/2	✓	✓	✓	✓	✓	✓	✓	✓	✓		
304/1	✓	✓	✓	✓	✓	✓	✓	✓	✓		
306/1	✓	✓	✓	✓	✓	✓	✓	✓	✓		
306/2	✓	✓	✓	✓	✓	✓	✓	✓	✓		
307/1	✓	✓	✓	✓	✓	✓	✓	✓	✓		
307/2	✓	✓	✓	✓	✓	✓	✓	✓	✓		
D7/JPS	✓	✓	✓	✓	✓	✓	✓	✓			

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.

20/4/20

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET (2)

Project No: 91601.03	**Suburb/Town:** Muswellbrook	**To:** ALS Environmental	
DP Order No: 150084	**DP Contact Person:** Paulo Sebastian / Chris Bozinovski	277-289 Woodpark Rd, Smithfield NSW 2164	
Prior Storage: Esky X Fridge ☐ Shelved ☐		**Ph:** (02) 8784 8555	**Attn:** Barbara Hannah
Do samples contain 'potential' HBM? Yes ☑ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)			

	Sample				Analytes							Notes
	DP ID	Date Sampled	Type S-soil W-water	Lab ID	TRH, PAH, Phenol	TRH, BTEX, PAH, Phenols, OCP, OPP, PCB, Metals (12)	OCP, OPP	Lead	Asbestos in soil (500mL)	Asbestos I.D Material		
1	T1/JPS	7/4/20	S		✓							
2	T2/JPS					✓						
3	T2/JRK						✓					
4	T3/JRK						✓	✓				
PQL (S) mg/kg												
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐											

Environmental Division
Sydney
Work Order Reference
ES2012239
Telephone : +61-2-8784 8555

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

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe, Al, Se, Sn, Sb, Mg, Co, B,

Total number of samples in container: 4

Date relinquished: 8/4/20

Results required by.....
☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours X Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: .....

Date: 8/4/20

Lab Ref: 11.3

Send results to:
Douglas Partners Pty Ltd

Email:
paulo.sebastian@douglaspartners.com.au
Josh.kramer@douglaspartners.com.au
chris.bozinovski@douglaspartners.com.au

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 Newcastle
Attention	Paulo Sebastian

Sample Login Details

Your reference	91601.03, Muswellbrook
Envirolab Reference	240645-A
Date Sample Received	09/04/2020
Date Instructions Received	24/04/2020
Date Results Expected to be Reported	01/05/2020

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	69 Soil, 6 Material
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	11.9
Cooling Method	Ice
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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ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
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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	Lead in TCLP	Naphthalene in TCLP	Acenaphthylene in TCLP	Acenaphthene in TCLP	Fluorene in TCLP	Phenanthrene in TCLP	Anthracene in TCLP	Fluoranthene in TCLP	Pyrene in TCLP	Benzo(a)anthracene in TCLP	Chrysene in TCLP	Benzo(bjk)fluoranthene in TCLP	Benzo(a)pyrene in TCLP	Indeno(1,2,3-c,d)pyrene - TCLP	Dibenzo(a,h)anthracene in TCLP	Benzo(g,h,i)perylene in TCLP	Total +vePAH's	Surrogate p-Terphenyl-d14	PAHs in water leach	On Hold
B1-1																								✓
B1-2																								✓
B1-3																								✓
B1-4																								✓
B2-1																								✓
B2-2																								✓
B2-3																								✓
B2-4																								✓
B3-1																								✓
B3-2																								✓
B3-3																								✓
B3-4																								✓
B4-1																								✓
B4-2																								✓
B4-3																								✓
B4-4																								✓
B5-1																								✓
B5-2																								✓
B5-3																								✓
B5-4																								✓

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customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	pH of soil for fluid#determ.	pH of soil TCLP (after HCl)	Extraction fluid used	pH of final Leachate	Lead in TCLP	Naphthalene in TCLP	Acenaphthylene in TCLP	Acenaphthene in TCLP	Fluorene in TCLP	Phenanthrene in TCLP	Anthracene in TCLP	Fluoranthene in TCLP	Pyrene in TCLP	Benzo(a)anthracene in TCLP	Chrysene in TCLP	Benzo(bjk)fluoranthene in TCLP	Benzo(a)pyrene in TCLP	Indeno(1,2,3-c,d)pyrene - TCLP	Dibenzo(a,h)anthracene in TCLP	Benzo(g,h,i)perylene in TCLP	Total +vePAH's	Surrogate p-Terphenyl-d14	PAHs in water leach	On Hold
B6-1																								✓
B6-2																								✓
B6-3																								✓
B6-4																								✓
B7-1																								✓
B7-2																								✓
B7-3																								✓
B7-4																								✓
B8-1																								✓
B8-2	✓	✓	✓	✓	✓																			
B8-3																								✓
B8-4																								✓
B9-1																								✓
B9-2																								✓
B9-3																								✓
B9-4																								✓
B10-1																								✓
B10-2																								✓
B10-3																								✓
B10-4																								✓

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www.envirolab.com.au

Sample ID	pH of soil for fluid#determ.	pH of soil TCLP (after HCl)	Extraction fluid used	pH of final Leachate	Lead in TCLP	Naphthalene in TCLP	Acenaphthylene in TCLP	Acenaphthene in TCLP	Fluorene in TCLP	Phenanthrene in TCLP	Anthracene in TCLP	Fluoranthene in TCLP	Pyrene in TCLP	Benzo(a)anthracene in TCLP	Chrysene in TCLP	Benzo(bjk)fluoranthene in TCLP	Benzo(a)pyrene in TCLP	Indeno(1,2,3-c,d)pyrene - TCLP	Dibenzo(a,h)anthracene in TCLP	Benzo(g,h,i)perylene in TCLP	Total +vePAH's	Surrogate p-Terphenyl-d14	PAHs in water leach	On Hold
F1/JRK																								✓
F2/JRK																								✓
F3/JRK																								✓
F4/JRK																								✓
F5/JRK																								✓
F6/JRK																								✓
D1/JRK																								✓
D2/JRK																								✓
D3/JRK																								✓
D4/JRK																								✓
401/0.05																								✓
401/0.15																								✓
402/0.4																								✓
404/0.2																								✓
406/0.35																								✓
106A/0.25																								✓
106A/0.35																								✓
106A/0.5																								✓
407/0.28																								✓
411/0.01																								✓

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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	Lead in TCLP	Naphthalene in TCLP	Acenaphthylene in TCLP	Acenaphthene in TCLP	Fluorene in TCLP	Phenanthrene in TCLP	Anthracene in TCLP	Fluoranthene in TCLP	Pyrene in TCLP	Benzo(a)anthracene in TCLP	Chrysene in TCLP	Benzo(bjk)fluoranthene in TCLP	Benzo(a)pyrene in TCLP	Indeno(1,2,3-c,d)pyrene - TCLP	Dibenzo(a,h)anthracene in TCLP	Benzo(g,h,i)perylene in TCLP	Total +vePAH's	Surrogate p-Terphenyl-d14	PAHs in water leach	On Hold
412/0.15																								✓
413/0.15	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
D1/JPS																								✓
D3/JPS																								✓
301/1																								✓
301/2																								✓
301A/2																								✓
303/1																								✓
303/2																								✓
304/1																								✓
306/1																								✓
306/2																								✓
307/1																								✓
307/2																								✓
D7/JPS																								✓

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

Envirolab Services Pty Ltd
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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.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2012239**

Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR PAULO SEBASTIAN	Contact	: Customer Services ES
Address	: PO BOX 472 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 1685	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: paulo.sebastian@douglaspartners.com.au	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: +61 02 49609600	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 49609601	Facsimile	: +61-2-8784 8500
Project	: 91601.03	Page	: 1 of 3
Order number	: 150084	Quote number	: EM2017DOUPAR0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Muswellbrook		
Sampler	:		

Dates

Date Samples Received	: 09-Apr-2020 11:35	Issue Date	: 14-Apr-2020
Client Requested Due Date	: 20-Apr-2020	Scheduled Reporting Date	: **20-Apr-2020**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 11.7
Receipt Detail	:	No. of samples received / analysed	: 4 / 4

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.**

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	Client sampling date / time	Client sample ID	SOIL - EA055-103 Moisture Content	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - S-12 OC/OP Pesticides	SOIL - S-19 TRH/BTEXN/PAH/Ph/OC/OP/PCB/8 metals	SOIL - S-24 TRH/BTEXN/PAH + Phenols
ES2012239-001	07-Apr-2020 00:00	T1/JPS	✓				✓
ES2012239-002	07-Apr-2020 00:00	T2/JPS	✓	✓		✓	✓
ES2012239-003	07-Apr-2020 00:00	T2/JRK	✓		✓		
ES2012239-004	07-Apr-2020 00:00	T3/JRK	✓	✓	✓		

Proactive Holding Time Report

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

Requested Deliverables

ACCOUNTS BRISBANE

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

ACCOUNTS PAYABLE

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

CHRIS BOZINOVSKI

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

JOSH KRAMER

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

PAULO SEBASTIAN

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

20/4/20

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET (2)

Project No: 91601.03	**Suburb/Town:** Muswellbrook	**To:** ALS Environmental	
DP Order No: 150084	**DP Contact Person:** Paulo Sebastian / Chris Bozinovski	277-289 Woodpark Rd, Smithfield NSW 2164	
Prior Storage: Esky X Fridge ☐ Shelved ☐		**Ph:** (02) 8784 8555	**Attn:** Barbara Hannah
Do samples contain 'potential' HBM? Yes ☑ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)			

	Sample				Analytes							Notes
	DP ID	Date Sampled	Type S-soil W-water	Lab ID	TRH, PAH, Phenol	TRH, BTEX, PAH, Phenols, OCP, OPP, PCB, Metals (12)	OCP, OPP	Lead	Asbestos in soil (500mL)	Asbestos I.D Material		
1	T1/JPS	7/4/20	S		✓							
2	T2/JPS					✓						
3	T2/JRK						✓					
4	T3/JRK						✓	✓				
PQL (S) mg/kg												
PQL (W) mg/L	ANZECC PQLs req'd for all water analytes ☐											

Environmental Division
Sydney
Work Order Reference
ES2012239
Telephone : +61-2-8784 8555

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

*Metals to Analyse (Please circle) As, Cd, Cr, Cu, Pb, Zn, Hg, Ni, Mn, Fe, Al, Se, Sn, Sb, Mg, Co, B,

Total number of samples in container: 4

Date relinquished: 8/4/20

Results required by.....
☐ Same day ☐ 24 hours ☐ 48 hours ☐ 72 hours X Standard

SAMPLES RECEIVED BY LAB
Please sign and date to acknowledge receipt of samples and return by email

Signature: .....

Date: 8/4/20

Lab Ref: 11.3

Send results to:
Douglas Partners Pty Ltd

Email:
paulo.sebastian@douglaspartners.com.au
Josh.kramer@douglaspartners.com.au
chris.bozinovski@douglaspartners.com.au

Appendix D

Drawing 1 – Test Location Plan (Test Pits)
Drawing 2 – Test Location plan (Surface and Stockpile Samples)
Photoplates

Site Location

0 10 20 30 40 50 m

Drawing adapted from Nearmap Image dated 13.1.2019

Legend

- Approx Location of Test Pits (current investigation)
- Approx Location of Geotechnical Test Pits (current investigation)
- Approx Location of Test Pits (previous investigation-DP,2019)
- Approx Location of Previous Boreholes & Wells (previous investigation-DP,2019)
- Approx Location of Boreholes (JK Environment)
- Site Boundary

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT:	Pacific Brook Christian School Ltd	
OFFICE:	Newcastle	DRAWN BY: PLH
SCALE:	1:1250 @ A3	DATE: 12.May.2020

TITLE: **Test Location Plan**
Supplementary Detailed Site Investigation (Contamination)
Lot 100, DP1261496, Maitland Street, Muswellbrook NSW

N

PROJECT No:	91601.03
DRAWING No:	1
REVISION:	0

0 10 20 30 40 m

Drawing adapted from Nearmap Image dated 13.1.2019

Legend

- Approx. Location of Fibro Samples
- Approx. Location of Surface Samples (B1-B10)
- Approximate Stockpile Sampling Locations
- Approx. Stockpile Locations (301-307)
- Site Boundary
- Approx Location of Confirmed ACM on Surface

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT: Pacific Brook Christian School Ltd		
OFFICE: Newcastle	DRAWN BY: PLH	
SCALE: 1:750 @ A3	DATE: 12.May.2020	

TITLE: **Test Location Plan (Surface & Stockpile Samples)**
Supplementary Detailed Site Investigation (Contamination)
Lot 100, DP1261496, Maitland Street, Muswellbrook NSW

N

PROJECT No:	91601.03
DRAWING No:	2
REVISION:	0

Figure 1: Residential backyard east of the eastern boundary, looking south.

Figure 2: Residential backyard east of the eastern boundary with small stockpiles of scrap metal looking south.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Proposed School** **Lot 100 Maitland St, Muswellbrook**	PROJECT: 91601.03 PLATE No: 1 REV: 0
	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

Figure 3: Residential backyard east of the eastern boundary, comprising a metal sheet building looking south.

Figure 4: General condition of asphalt access track, south of the buildings, looking east.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Proposed School** **Lot 100 Maitland St, Muswellbrook**	PROJECT: 91601.03 PLATE No: 2 REV: 0
	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

Figure 5: Area of buried asphalt access track, north of the Building 5, looking west.

Figure 6: Stockpile 301 located in the eastern portion of the site, generally comprising gravelly silty sand and abundant vegetation.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Proposed School** **Lot 100 Maitland St, Muswellbrook**	PROJECT: 91601.03 PLATE No: 3 REV: 0
	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

Figure 7: Stockpile 301A located in the eastern portion of the site, generally comprising gravelly silty sand and abundant vegetation.

Figure 8: Stockpile 302 located in the northern portion of the site, generally comprising woodchip mulch (not sampled).

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	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

Figure 9: Stockpile 302 located in the northern portion of the site, generally comprising quarry gravel (not sampled).

Figure 10: Stockpile 303 located in the central northern portion of the site, generally comprising silty sand and gravel.

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	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

Figure 11: Stockpile 304 located in the central northern portion of the site, generally comprising silty sand and gravel.

Figure 12: Stockpile 305 located in the central portion of the site, generally comprising silty woodchip mulch (not sampled).

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	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

Figure 13: Stockpile 306 located in the central northern portion of the site, generally comprising silty sand and gravel and intermixed clay with trace asphalt.

Figure 14: Stockpile 307 located in the western portion of the site, generally comprising silty sand and gravel.

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	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

Figure 13: Stockpile 306 located in the central northern portion of the site, generally comprising silty sand and gravel and intermixed clay with trace asphalt.

Figure 14: Stockpile 307 located in the western portion of the site, generally comprising silty sand and gravel.

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	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

Figure 15: Typical surface of Building 3

Figure 16: Typical surface area of Building 4.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Proposed School** **Lot 100 Maitland St, Muswellbrook**	PROJECT: 91601.03 PLATE No: 9 REV: 0
	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

Figure 17: Typical surface area along the north eastern side of Building 5.

Figure 18: Garden bed situated along the south western face of Building 5.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Proposed School** **Lot 100 Maitland St, Muswellbrook**	PROJECT: 91601.03 PLATE No: 10 REV: 0
	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

Figure 19: Fragment F1/JRK identified on the concrete slab along the north western face of Building 5.

Figure 20: Typical surface area of Building 7.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Proposed School** **Lot 100 Maitland St, Muswellbrook**	PROJECT: 91601.03 PLATE No: 11 REV: 0
	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

Figure 21: Surface area found along the north eastern face of Building 8.

Figure 22: Garden bed running along the south western face of Building 8.

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	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

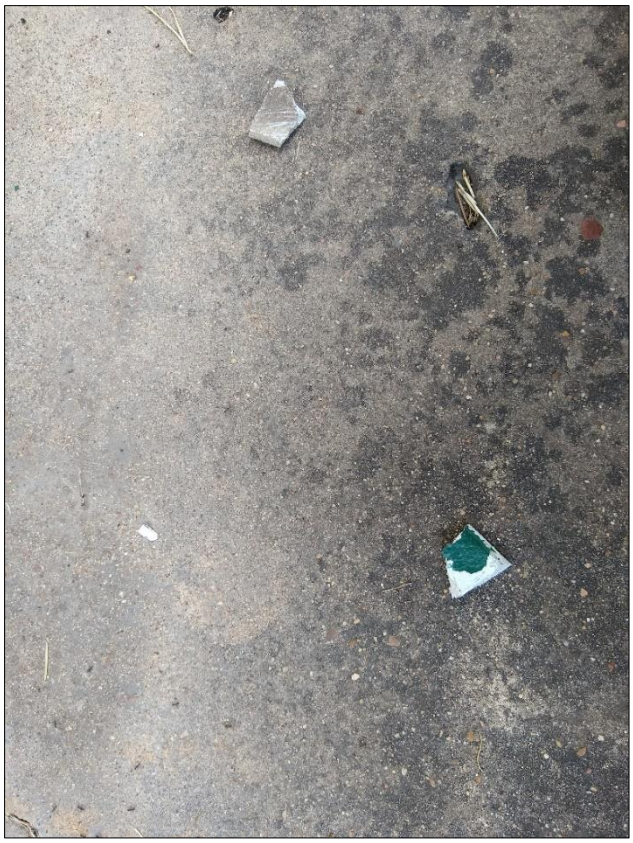

Figure 23: Fibro fragments F2/JRK identified on concrete pavement along the north eastern side of Building 8.

Figure 24: Concrete pavements located along the north western face of Building 9.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Proposed School** **Lot 100 Maitland St, Muswellbrook**	PROJECT: 91601.03 PLATE No: 13 REV: 0
	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

Figure 25: Typical surface area around Building 9.

Figure 26: Fibro fragment F3/JRK found along the north eastern face of Building 9.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Proposed School** **Lot 100 Maitland St, Muswellbrook**	PROJECT: 91601.03 PLATE No: 14 REV: 0
	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

Figure 27: Typical surface area of Building 10.

Figure 28: Fibro fragment F4/JRK located along the southern side of Building 10.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Proposed School** **Lot 100 Maitland St, Muswellbrook**	PROJECT: 91601.03 PLATE No: 15 REV: 0
	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

Figure 29: Garden bed located along the western face of Building 6.

Figure 30: Typical surface area along north western face of Building 6.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Proposed School** **Lot 100 Maitland St, Muswellbrook**	PROJECT: 91601.03 PLATE No: 16 REV: 0
	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

Figure 31: Fibro fragment F6/JRK located in the garden near the north western corner of Building 6.

Figure 32: Damaged external wall located along the southern face of Building 6. Sampling location for fibro sample F5/JRK.

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	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

Figure 33: Typical surface area of Building 1.

Figure 34: Surface area along the eastern face of Building 1.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Proposed School** **Lot 100 Maitland St, Muswellbrook**	PROJECT: 91601.03 PLATE No: 18 REV: 0
	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

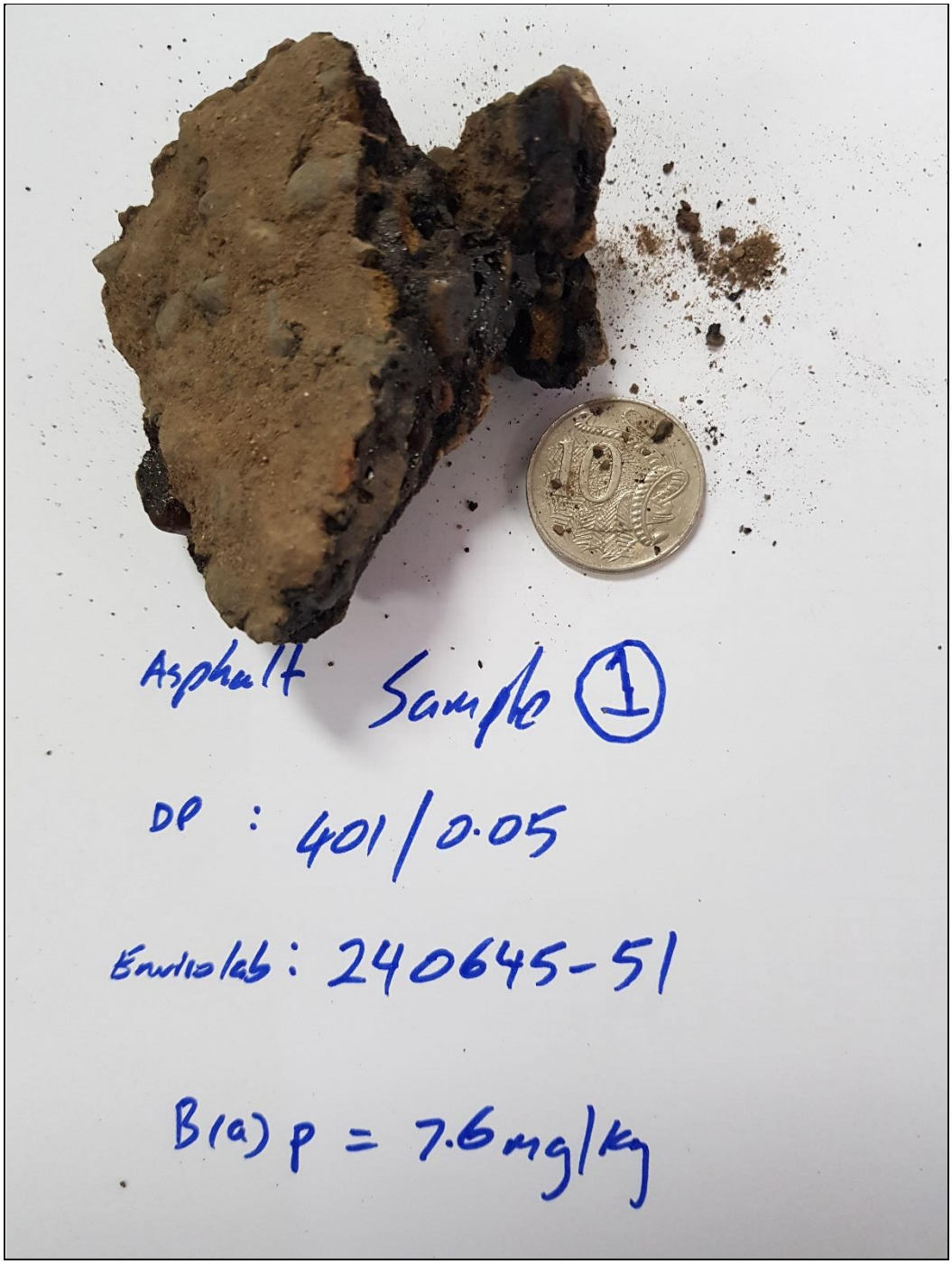

Figure 35: Photo of surface asphalt from test pit 401.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Proposed School** **Lot 100 Maitland St, Muswellbrook**	PROJECT: 91601.03 PLATE No: 19 REV: 0
	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

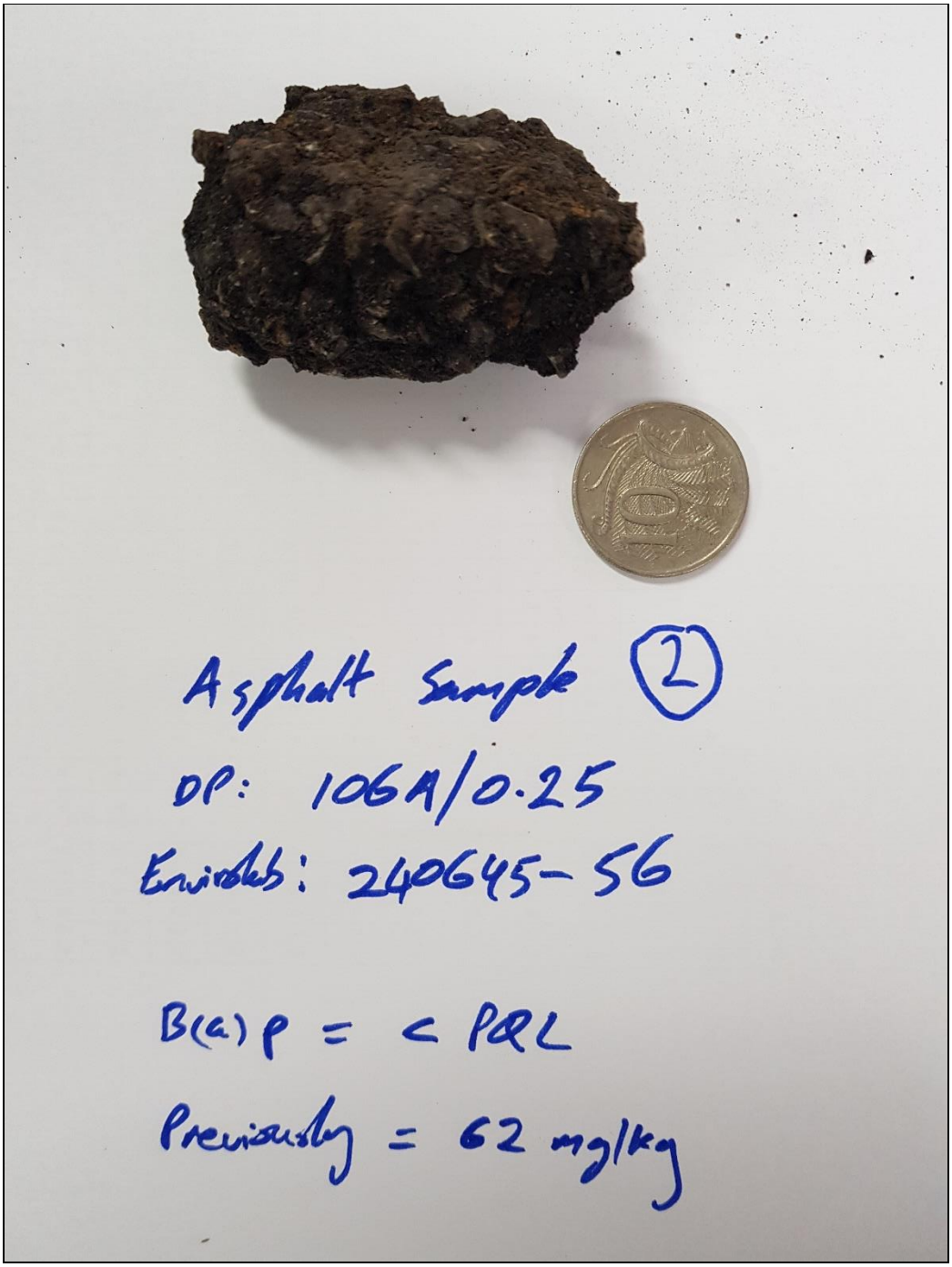

Figure 36: Photo of buried asphalt from test pit 106A.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Proposed School** **Lot 100 Maitland St, Muswellbrook**	PROJECT: 91601.03 PLATE No: 20 REV: 0
	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

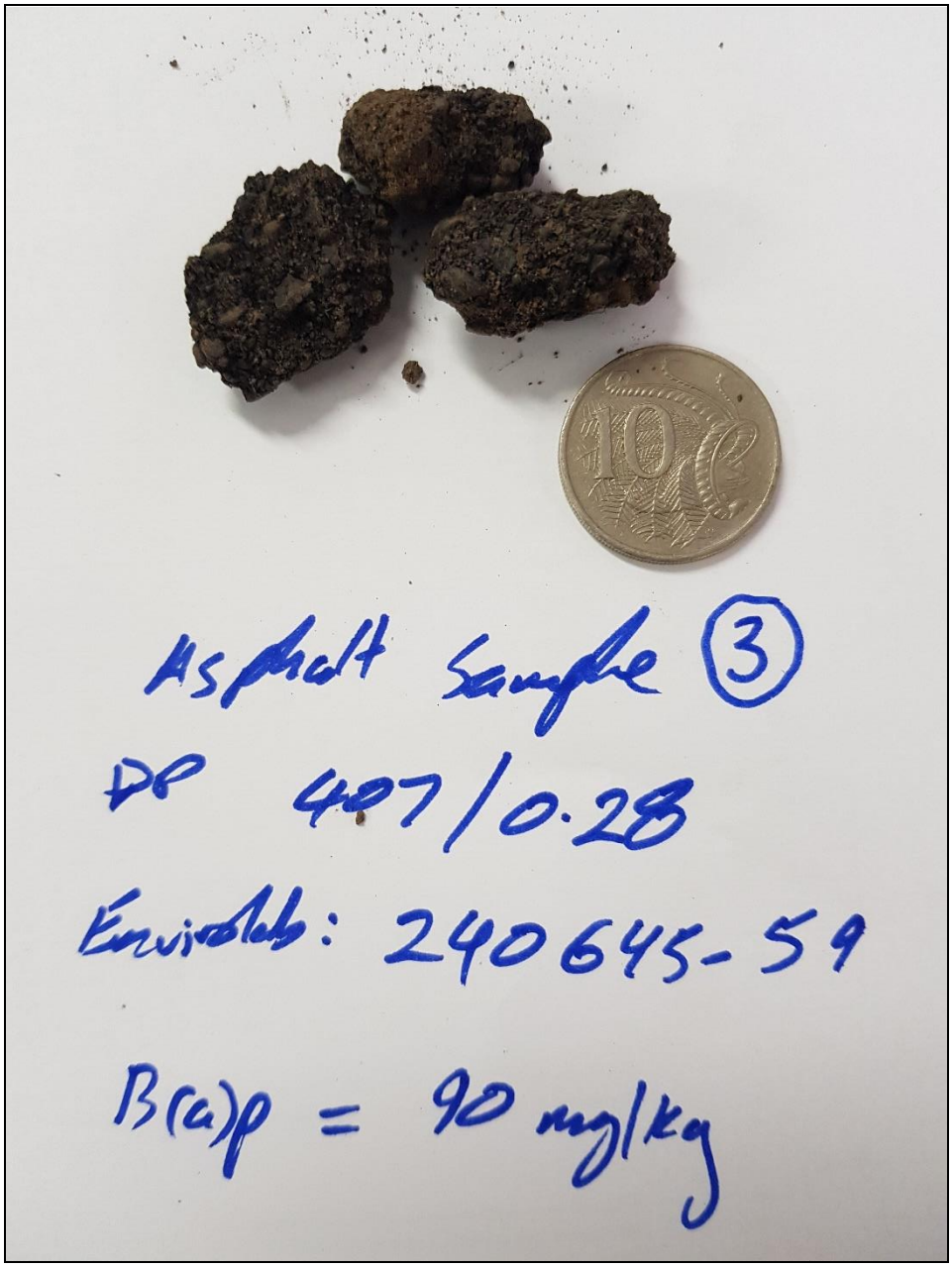

Figure 37: Photo of buried asphalt from test pit 407.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Proposed School** **Lot 100 Maitland St, Muswellbrook**	PROJECT: 91601.03 PLATE No: 21 REV: 0
	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20

Figure 37: Photo of buried asphalt from test pit 106A (upper dark grey materials and ash filling (lower dark grey materials).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Proposed School** **Lot 100 Maitland St, Muswellbrook**	PROJECT: 91601.03 PLATE No: 22 REV: 0
	CLIENT: Pacific Brook Christian School Ltd	DATE: 25-Aug-20